# ARMY INFORMATION DIGEST

Vol. 4 No. 7 July 1949

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USAF Photograph

GENERAL HOYT S. VANDENBERG

CHIEF OF STAFF, UNITED STATES AIR FORCE

# BUILDING A BALANCED AIR FORCE

*By*

GENERAL HOYT S. VANDENBERG
*Chief of Staff, United States Air Force*

AS a nation, our resources in men and materials are great, but they are not limitless. We face a mighty and a growing challenge. Unless we act wisely, unless we plan well, we must face the possibility of ultimate defeat. It is no longer adequate merely to say we shall have as many cannon as possible, as many skills as possible, as many ships or as many airplanes as possible. It is no longer adequate even to plan for as many soldiers, sailors, and airmen or as many workers as possible. So total are the demands of modern war that each of these categories of products or of people must be subtracted from the others. We must plan for the most effective distribution of all that we can spare for our defense.

Such planning has recently been called "balancing" our forces. Anything, to be "balanced," must be balanced with or against something else. A well-balanced team, for instance, is not one in which all players are of equal size or weight, or are evenly spaced on the playing field. A well-balanced team is one which is organized and trained in such a manner as to be able to counter an opposing team's strength and take full advantage of an opposing team's weaknesses. This is the kind of balance we want in the forces that defend our Nation.

The proper balance of our forces depends upon the circumstances that face us. A military force is not properly balanced against itself. It should be weighted against the enemy. It should be designed and proportioned to evade an enemy's strength and to exploit his weakness. Our Air Force must be planned or balanced to defeat a potential enemy, while protecting, as completely as possible, our Nation and its allies. Only the defeat or decisive damaging of an attacking enemy

*Based on addresses by General Vandenberg at Dallas and Indianapolis, February and May 1949.*

can guarantee our own safety. This is the mission for which our Air Force must be planned and equipped—the mission it must be prepared to accomplish.

No one of the services can do the job alone. Whether the Air Force strikes back at the heart and the internal strength of an attacking enemy from bases on our own continent—with long-range heavy bombers, with medium bombers refueled in the air, or with medium bombers operating from forward bases overseas (any or all of which methods we could employ today) —we must depend upon the coordinated effort of all our armed services to achieve the ultimate aim.

There are many balances which we must achieve within the Air Force itself. We must balance our investment against the possibilities of war today and the possibilities of war five or ten years from today. We must not fatally weaken ourselves today in order to be strong tomorrow. On the other hand, we must not mortgage our future by neglecting research and development in order to gain the temporary advantage of a great number of today's weapons. Our long-range weapons, such as the great B-36 now in production, take much longer to develop and produce than our short-range and defensive weapons. This must be taken into account in our planning.

From time to time, various phases of our operations and various types of our aircraft have been the object of unusual emphasis in the public mind, to the seeming exclusion of interest in the overall development of our strength. Within the past year or so, public focus has ranged from interest in jet fighters and bombers through our adventures in the penetration of the sonic barrier and the development of very heavy bombers. Each of these aircraft has a definite place in our broad, long-range planning. No one of them is the criterion of our aerial strength.

The Air Force has been careful to reiterate that there is no defense that is a complete defense today. This is unfortunately true even of air defense by high-performance fighters. In a heavy, determined attack, some planes will probably get through. This is a fact which must be faced. We do not, for example, refer to our radar net as a radar "fence." For there are no fences against airplanes. Nor are our air defenders trying to build a Maginot Line out of radar beams, airplanes, or anything else.

The best defense, in fact, is an active defense in depth and a powerful strategic offense in depth. This is true for our

entire land, sea, and air team—a team in which each member performs that portion of the task for which best fitted.

The Air Force, as part of that team, wields the weapon of strategic air power. In the hands of the United States, strategic air power is primarily a deterrent to war. It is a means of quick retaliation against any aggressor. A strategic Air Force is designed to destroy an enemy's means of making and supporting an attack against ourselves.

We believe strongly in the effectiveness of long-range strategic bombing and have done so since this effectiveness was established between 1942 and 1945. If conflict were forced upon us, our strategic force would pass from the role of deterrent to that of heavy retaliation. Our insurance against defeat and our hope of future victory would depend, in large measure, upon the effectiveness of this attack. This is the reason for the recent improvements in our strategic weapons. These weapons are not only the B-36, but also the B-50, the B-29, and other types and modifications now being developed. Of the fourteen Air Force groups equipped primarily for strategic bombardment, only four are being equipped with the B-36. For while the B-36 is a capable performer, the Air Force has never held that any one type of plane, any more than one type of combat operation, is the solution of all our security problems.

Strategic attack against an enemy's vulnerable interior is only one phase of the Air Force job. The Air Force also is responsible for the air defense of the United States and for air support of land and sea operations. Thirty-four of our forty-eight groups are equipped primarily for these tasks. These groups include troop carrier, transport, reconnaissance, light bombardment, and similar types of employment.

The development of aircraft for tactical and transport operations is not being relegated to some obscure limbo, discarded and forgotten. More than two-thirds of the Regular Air Force groups are trained and equipped primarily for air defense and for the support of land and sea operations. In addition, the Air National Guard consists entirely of fighter and light bomber groups. This adds up to more than four-fifths of the Air Force designed for purposes other than strategic bombardment.

As for our transport operations—their flexibility and their effectiveness—the Berlin Airlift, the greatest effort of its kind in history, has become a commonplace. Operation Vittles

has become an unobstrusive triumph of skill and organization. And, in our own country, we witnessed the stirring performance of Operation Haylift.

Air power, alone and unassisted, is scarcely capable of winning a complete victory. Any future war, I am convinced, will be fought and won by land, sea, and air. Such being the case, it is not likely that I would be a party to any Air Force program which would neglect the area of tactical support. When the day comes that the men of our ground forces need the utmost in tactical air backing, it will be immediately and overpoweringly forthcoming.

Maintaining a balanced Air Force involves more than a carefully adjusted relationship between planes for offense and defense, between planes for tactical support and strategic counteroffensive. We also must plan for the effective utilization of our reserve strength in machines and men.

For air power today includes everything that flies. It includes everything that an air force uses in support of its operations. It includes every factory and every man that produces anything necessary for that support. In a sense, it even includes the raw material for the bases, the transportation, the fuel, and all the gadgets that are required to keep airplanes in the air. To maintain this backing of reserve strength, we must spend some of our limited funds to maintain planes in readiness, to provide stockpiles of materials, and to keep plants in stand-by status.

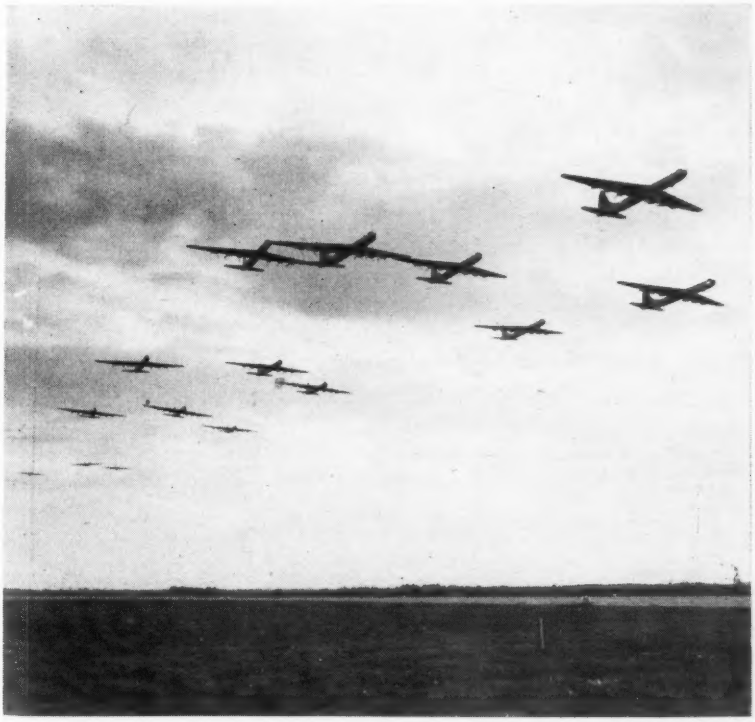
Also, we must maintain a carefully calculated proportion between our regular and reserve strength in manpower and skills. Despite the increasingly sudden nature of modern war, we cannot attempt to keep on active duty all the trained airmen who would be needed immediately if war should begin. The reserve forces available to us, therefore, must be brought to peak efficiency, in readiness for mobilization assignments.

The basic plan for a strong and adequate Air Force, with proper recognition of reserve elements, was endorsed by the President's Air Policy Commission and the Congressional Aviation Policy Board, in their reports published in 1948. Under Lieutenant General Elwood R. Quesada, my Special Assistant for Reserve Forces, intensive studies have been made, and plans have been developed for the efficient use of Regular facilities in training our Air Reserve. (See "The New Air Reserve Training Program," page 58.)

As part of its mission, the Regular Air Force must be ready at all times to deliver an immediate and powerful strategic counteroffensive against the sources of any enemy's potential war-making capacity. The reserve forces, for their part, must be prepared to play an important role in the defense of our own territory. They likewise must be prepared to furnish personnel to augment the Regular establishment in an emergency.

The Nation's security is a common responsibility. The Army, the Navy, the Air Force are equally involved. All veterans of past service and all citizens of the United States have an equal stake in our safety. This safety probably cannot be completely guaranteed for a long time to come. It will not be easily achieved. Some sacrifice by all of us may be necessary, even through years of peace.

Any realistic plan for our own security which can be drawn up today requires the complete participation of all members of our national security team.



USAF Photograph

# GUN SEIBU--IN JAPAN

*By*

CECIL G. TILTON

THE signing of the Instruments of Surrender, on 2 September 1945, brought an official end to the smoke and roar of battle in the Pacific. With the ushering in of peace, policy directives from the Joint Chiefs of Staff in Washington gave the Supreme Commander powers and discretion to use the Japanese government and its agencies, including the Emperor, to accomplish the Occupation mission. The Supreme Commander thereupon established a supervisory military administration over Japan, inaugurating a new and unparalleled chapter in the history of military government.

An organization was set up immediately. On the policy level, General Headquarters, Supreme Commander for the Allied Powers, was created. This dignified title, however, is used rarely by the Occupation forces and by the Japanese. SCAP is sufficient; or sometimes GHQ. Up country Japanese officials and civilians, alike, know SCAP as *Mac Kasa Shireibu.*

On the operational level, military government units of both the Sixth and the Eighth United States Armies were used. With the inactivation of the Sixth Army, the entire responsibility was placed upon the Commanding General, Eighth Army. Here again, the terminology commonly is shortened to Eighth Army, or just MG. When referring to the Eighth Army, the Japanese usually say *Hachi Bun.* To them, military government is *Gun Seibu.*

SCAP itself is a large general headquarters, in which are centered the responsibilities for directing the Occupation of a country of 80,000,000 people. The high policy-making body for the Occupation of Japan is the Far Eastern Commission, in Washington, comprising representatives of 11 nations which contributed to the defeat of Japan. Policies adopted by the

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Far Eastern Commission are transmitted to the Supreme Commander as directives by the Joint Chiefs of Staff.

The staff sections of SCAP translate general policy into specific directives to the Japanese government. To all in the Occupation these orders are known as SCAPINS. Only GHQ issues orders and directives on occupational matters to the Japanese government. No other echelon of command has that authority.

Upon receiving a SCAPIN, the Japanese Cabinet assigns the measure to the appropriate ministry, board, office or committee. Within a given time, the agency must produce a workable plan, then start the machinery for its accomplishment. To complete some tasks, all four levels of the Japanese governmental structure may be called into play—the national, prefectural, city, town or village.

During the past two years, the ordering phase of the Occupation has given way to the guidance phase. The number of SCAPINS has diminished gradually, and more counseling and advisory conferences and discussions have been held with Japanese officials.

GHQ holds the central government responsible for the

U. S. Army Photograph

Military personnel supervise the loading of narcotics by Japanese laborers. The narcotics—unfit for medical purposes—will be burned to prevent their misuse.

proper fulfillment of the SCAPIN. The Japanese officials, in turn, must arrange to carry out their instructions by all available means, at the various governmental levels. The Cabinet, as the executive branch, is normally "the government." If cabinets fall and new ones are formed, SCAP policy continues nevertheless; for SCAP *uses* the Japanese government; it does not support it.

How does SCAP know that the directives given to the Japanese are being carried out? This is the work of military government, or *Gun Seibu.* The responsibility for implementing occupation policies rests principally with the Commanding General, Eighth Army.* To execute the military government function, as contrasted with tactical or purely Army matters, the Commanding General has in his headquarters the Military Government Section. GHQ makes its policies known to the Commanding General, Eighth Army, through command letters, circulars and communications. Sometimes it suggests action informally.

The Eighth Army Military Government Section is organized in five divisions, which, in turn, are subdivided into branches: (1) The Administration and Personnel Division includes branches for officer-civilian classification and civilian personnel administration. (2) The Economics Division branches are concerned with Manufacturing and Industry; Labor, Trade and Commerce; Imports and Exports; Accounting; Price Control and Rationing; Utilities and Natural Resources. Other divisions are (3) Finance and Civil Property; (4) Legal and Government, comprising Courts and Law; Political Parties; Prefecture and Municipalities; and (5) Social Affairs, including Civil Education; Public Health; Public Welfare; Repatriation; and Civil Information branches. In addition, the Military Government Section supervises the United States vaults of the Bank of Japan, Tokyo, and the United States vaults in the Osaka Mint; and it conducts a school for military government personnel.

The Section—composed of 47 officers, including a chaplain,

* The Commander, Naval Activities, Japan, has occupation responsibility in the area around the Naval base at Yokosuka, and the Commanding General, Headquarters and Service Group has certain responsibilities in downtown Tokyo. The Yokosuka Naval Zone of Responsibility is small territorially, but contains an important harbor and city. Its Military Government Section comes under the Commander, Fleet Activities, but all operational military government affairs are coordinated closely with the Kanagawa Military Government Team. The latter team is in direct command relationship with Headquarters, Eighth Army.

38 noncommissioned officers and enlisted men, and 72 civilians —is directed by a brigadier general and his executive staff. Many of the civilians are of professional caliber and exercise the authority of equivalent officer grades.

The work of the Section is tri-functional. Command instructions come down from SCAP; proposals and suggestions come up from the two corps headquarters or the teams, or they may originate in the Section. Frequently, as a result of work done within the Section, the Army commander makes recommendations of his own to SCAP, suggesting that a specific policy be initiated for the lower echelons of MG units. Conferences, discussions, and special study projects, with occupa-

U. S. Army Photograph

A doctor of the Tokyo Military Government team checks the pulse of a young encephalitis victim.

U. S. Army Photograph

**The Reverend Dr. Edmund Walsh, Vice President of Georgetown University, meets with students during a tour of Catholic educational institutions in Japan.**

tional personnel as well as Japanese officials and citizens participating, are other important facets of the Section's work.

For purposes of military government administration, Japan is divided territorially [except as described in footnote on page 10] into two major areas—the I Corps covering the approximate southern half, and the IX Corps covering the approximate northern half. Except for three special instances, in which direct command relationship is maintained, Headquarters, Eighth Army depends upon the two corps headquarters for liaison with the military government units in the field. In each corps headquarters is a Military Government Section which advises on military government affairs in the corps area. The I Corps and IX Corps commanders supervise teams on two echelons—the seven regional teams and one district team which compose the supervisory level; and the 45 prefectural teams which constitute the operating level.

Regional team commanders coordinate the activities of the prefectural teams within their areas. One exception is the Hokkaido team, which serves as the district as well as the prefectural team. Each regional team has approximately the same average personnel strength—about 65, including officers,

enlisted men and civilians. The number of prefectures and the population in each regional area, however, may vary considerably—the number of prefectures from four to seven; the population from approximately 4,000,000 to 12,000,000. The specialists who head the various sections—including Legal and Government, Information, Labor, Natural Resources, Economics, Education and Public Health sections—make the rounds, giving counsel or aid to the prefectural teams. Through these specialists, the experiences and the solutions arrived at by one team are made available to all.

The brunt of military government operations is borne by the prefectural teams, one of which is stationed in each of the prefectural capitals. Members of the team work directly with Japanese officials, organizations, and the common citizenry. The teams range from 45 officers, enlisted men, and civilians in Fukui Prefecture, to the Kanagawa Prefecture team with 120, and the Tokyo Metropolis team with 80.

Military government in Japan has always been supervisory —not operational or direct. The teams do not give direct orders to the Japanese, since this prerogative may be exercised only by GHQ. Members of the team, however, do advise and suggest. The team's principal concern is to keep abreast of local conditions—political, governmental, economic, educational, and financial.

The commanding officer of the team holds frequent conferences with the governor of the prefecture and with the chairman of the assembly. The *chiji*—the chief executive—often calls. The conference invariably begins with a polite and hearty "*Ohaio gozaimas!*" or "Good morning!" and ends with an "*Arigato!, Sayonara!*" or "Thank you and good-bye!" The *chiji* reports on the Kencho (prefectural government) and explains the happenings within the prefecture. Formerly appointed, the *chiji* is now an elected executive, quite conscious of his responsibilities to the electorate. Pressing issues, such as rice quotas, tax collections and reconstruction are discussed. Many of the conferences are with the mayors and assembly chairmen of the cities, towns and villages. The gamut of local conditions is surveyed so that, at all times, the commanding officer knows what is going on.

In addition to the usual administrative and housekeeping sections, the teams are organized into functional sections, each with an officer in charge. Some officers have a number of functions to perform. The Legal and Government Officer, for

example, not only observes the operation of the local governments and courts, but also must keep informed on political parties, and on finance and tax problems. His greatest task is to convey to the Japanese people a working knowledge of the principles of representative government. At every opportunity, he explains that a citizen in a democracy has responsibilities as well as rights; that if government is to be beneficial, friendly and protective, both elected officials and individual citizens must make it so. The Japanese often ask such questions as, How do political parties work in America? How does the executive remove officials from their posts? and How has the system of recall benefited the state? Most important, they are concerned with *Naze*—the Why? of all principles, procedures and customs. The Legal and Government Officer is kept occupied—in conferences, speeches and meetings throughout the prefecture—explaining political and governmental affairs.

The Economics Officer—on the end of the long chain of responsibility—is concerned with vitalizing the Japanese economy, so as to achieve as rapid rehabilitation as possible. Today he may be engaged in overseeing the inventory of the industrial plants in the prefecture. Tomorrow, under direction, he may be inspecting an electric power plant, a steel mill, or a shipyard, to discover means of stepping up production. The next day he may be observing conditions in the fishing industry or otherwise helping to overcome local food shortages.

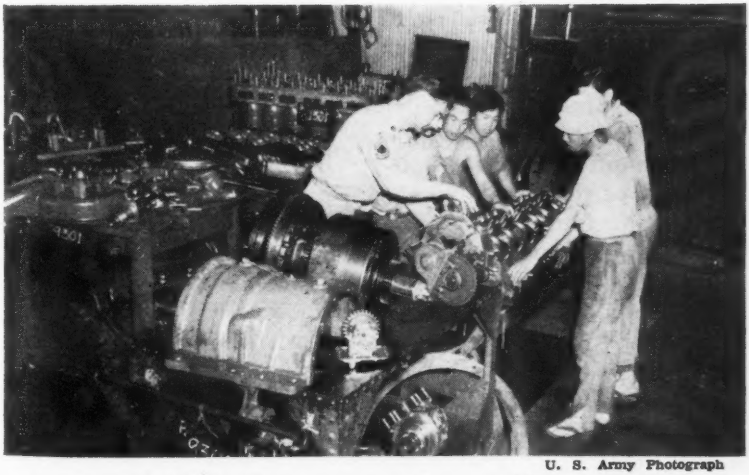
The Labor Officer has an important task—the development of healthy, objective-type labor unions, and the fostering of harmonious labor-management relations. The Public Health Officer maintains close surveillance over measures for the control of disease and epidemics. He supervises the carrying out of SCAP directives, and aids and advises Japanese public health and sanitation personnel.

The Education Officer is engrossed in the whole field of Japanese education, as it is affected by the SCAPINS and the new laws passed by the Diet. The removal of elements that fostered ultra-nationalism and aggressive militarism is one of his continuing tasks. He seeks to stimulate citizen interest in educational issues. He encourages community interest in the local school board, the selection of teachers and subject matter, school building construction, and morale in the educational system.

The Information Officer, the Economics (Agriculture) Officer, and the Welfare Officer travel through the remote byways of the prefecture, following with indefatigable patience and understanding the daily problems of the farmers, the fishermen, the poor and the needy.

Today, in the fourth year of the Occupation—with the beginning of democratic tendencies established among the Japanese people—strides are being made toward the goals set forth by the Allied nations in the Potsdam Declaration. Civilians—a term entirely new in Japan—no longer are treated as subjects *en masse*. Japanese officials, accountable at last to the electorate for their actions, daily are taking steps "in the public interest." On every level, the military government teams foster the growth of self-reliance, both in private and in governmental agencies. The feudalistic trek to Tokyo for the only proverbial all-wise answer is a diminishing phenomenon. The effects of a hundred decades of regimentation are being loosened. The Japanese are being encouraged to do this themselves, gradually.

While outside the orbit of the Occupation there are great ideological clashes, throughout the country the military government teams proceed with their day-to-day tasks—the surveillance of adherence to SCAP policy. In doing so, they are nourishing the grass roots of a regrowth of Japan along democratic lines.



U. S. Army Photograph

A noncommissioned officer supervises the assembly of marine engines by Japanese factory hands.

# LIFE ABOARD A CARRIER

*By*

MAJOR ROBERT B. MCBANE

TEAMWORK, essential in all military activity, is highly spectacular on the Navy's aircraft carriers. The largest, the *USS Coral Sea,* is a floating airdrome with nearly 3000 men aboard, all working directly or indirectly toward launching, landing, and maintaining 125 planes. Speed and safety, difficult factors to reconcile, are the twin goals; but with precise coordination by skilled technicians, both are accomplished—admirably.

The mission of a carrier, simply put, is to provide a waterborne airbase for fighter and bomber aircraft. Each carrier, therefore, must contain facilities normally spread out over several hundred acres of ground—landing strip, hangars, fuel dumps, operation towers, staff headquarters, repair and machine shops, quarters and messing facilities for the crews. Public utilities—electricity, telephone service, heat, water, sewage disposal and so on—sufficient to serve a small city, must be provided, not to mention such essential services as post office, laundry, barber shop, church, "general store," and hospital. And there must be recreational services—library, motion pictures, soda fountain, and athletic facilities. All of these, and more, are on the *Coral Sea.*

Newest of the Navy's eight active aircraft carriers, it is also the largest. It is longer than three football fields laid end to end, 986 feet from bow to stern. Its standard displacement of 45,000 tons was increased by several thousand tons during construction and subsequent remodeling. Completely reconditioned last fall, it is the most modern of the Navy's carriers.

A new breed of sailor has been developing during the years since the Navy's first carrier, the *USS Langley,* was com-

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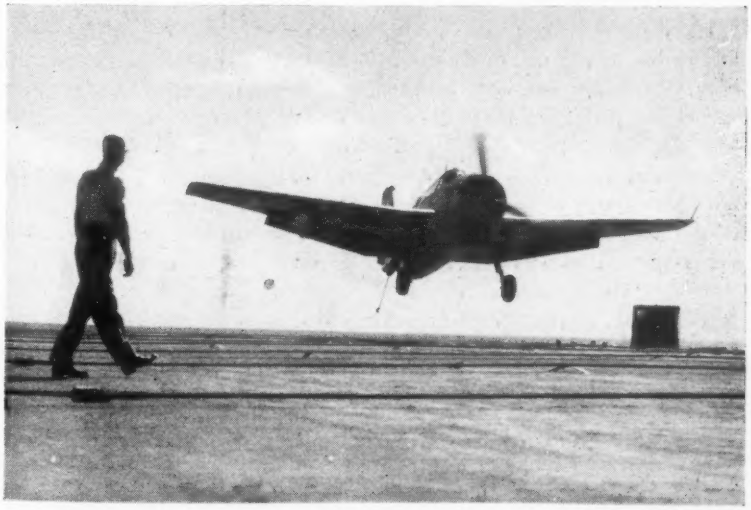
missioned in 1922. Although many of the jobs on carriers are common to all naval vessels, a sizable proportion of the crew must be technicians trained in the unique job of handling aircraft on shipboard. Official recognition of this specialty as a career came only a few months ago, when the rating of airman was established, comparable to seaman. Now a sailor can pursue air specialties throughout his service career, always working on carriers or at naval air bases ashore.

Morale is high among these sailor-airmen. The jobs are exacting and exciting; and every man from the flight deck chief to the newest plane pusher takes a personal pride—and a certain amount of credit—when a flawless take-off exercise is accomplished. The common mission of "get 'em in the air and get 'em back" binds all hands together in a unique way. There is never ending awe and drama in watching a ponderous seven-ton airplane catapulted into the air from less than 200 feet aft of the bow of the ship, or picking up speed in a 400-foot conventional take-off from the deck. Only experienced carrier men realize the countless hazards facing every pilot as he starts his plane roaring down the deck. The propeller wash of the preceding plane, a sudden wind shift, a brief motor failure—any of these could send the plane plunging into the sea.



U. S. Navy Photograph

Coming in for a landing on the *Coral Sea*. Note the tail hook which will engage the arresting cables stretched across the deck, bringing the plane to a quick stop.

Currently, carrier planes are limited mostly to fighters and single-engine attack bombers (dive and torpedo) of various types. The principal limitations on the use of carrier aircraft are the strength and width of the flight deck. Length of the runway provides little, if any, problem. Planes now operating from the large carriers use less than half the deck for take-offs, and considerably less for landings. Only the weight and wing span of large multi-engine bombers prevent their operating from a carrier.

Men on the *Coral Sea* proudly describe the test flight last summer of a Navy Neptune, a twin-engine bomber weighing 37 tons, which rose into the air long before it reached the end of the runway. The pilot, aided by special guide lines, had to keep his plane's wheels close to the port edge of the deck, to prevent brushing his opposite wingtip against the "island," or superstructure, on the starboard side of the ship. Such flights now are routine on all the larger carriers.

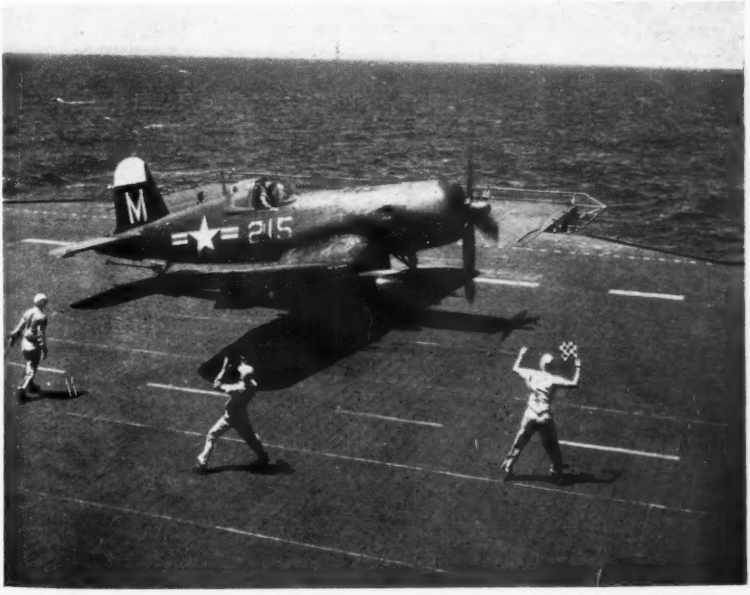
Jet planes were first used routinely in the Caribbean maneuvers in February 1949, when a squadron of them operated from the carrier *Roosevelt*. They are usually catapulted, since they require more speed for take-offs. They also require somewhat different handling on the deck, because of the intense heat of their exhausts.

Landings, even more spectacular than take-offs, put a tremendous strain on the aircraft—and give the after portion of the flight deck a heavy pounding. The pilot approaches from ahead of the carrier, makes a 180-degree turn, and comes in just over the stern. When his altitude and speed are correct, as indicated by the landing signal officer, he cuts his engine and drops the remaining 20 or 30 feet to the deck. The plane is eased to a stop almost instantly by one of a number of arresting cables that catch on a hook at the rear of the plane. Barrier cables are up ahead to stop the plane if an arresting cable or tail hook should break. With experienced pilots and deck crews, planes can easily be landed at intervals of 20 seconds. Take-offs frequently are accomplished at intervals of 15 seconds.

For night operations, the flight deck is outlined with dim lights, and the plane directors use red and green lucite wands. The landing signal officer stands out spectrally in a luminous red-and-yellow striped costume, making him resemble an animated skeleton. Radio approach equipment is available on some carriers, for use when visibility is poor.

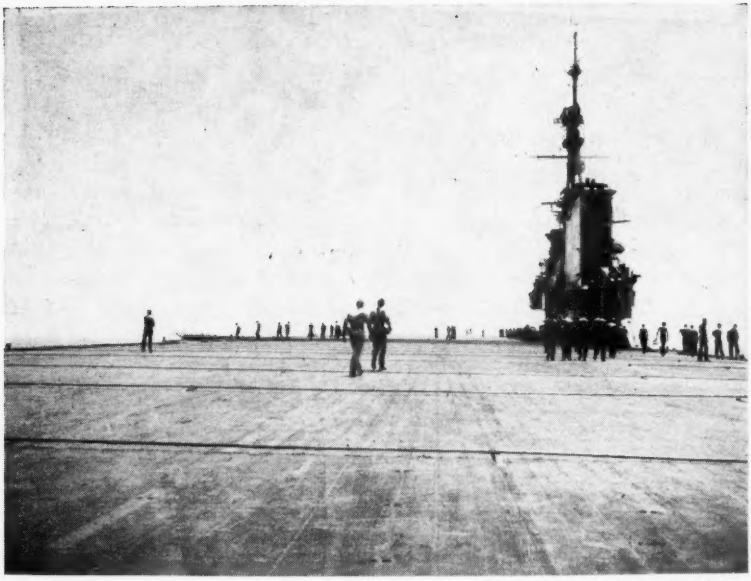
Wind conditions—the critical factor—are always kept constant. A 30-knot wind is required for best operation; and this is controlled by the speed of the carrier. If a 15-knot wind is blowing, for example, the carrier heads into it at 15 knots, giving a total wind velocity of 30 knots down the length of the ship. If there is no wind, the carrier simply speeds up to 30 knots. If there is a stronger wind—say 40 knots—the carrier could head into it and steam backwards at 10 knots. The latter, however, is an unusual operation, and one that would be considered only in emergency conditions. The wind is kept slightly off the port bow, so that it blows at a 5 to 10 degree angle across the deck. This blows the propeller wash of the preceding plane out of the path of a plane taking off or landing, and also disperses the air pockets caused by the island structure.

Carrier organization is standardized, to provide the most efficient team for these highly complex operations. The captain of the ship, in overall command, usually is a veteran Naval officer with extensive flying experience. Captain A. B.




Staff Photograph

The flight deck officer and his assistant guide the pilot into take-off position. The "Go Ahead" is given when the engine sounds right and the preceding plane is clear of the ship.



Staff Photograph

The flight deck is longer than three football fields laid end to end.

Vosseller, USN, in command of the *Coral Sea,* earned his wings as a Naval aviator seven years after graduating from the Naval Academy, following wide experience on battleships and destroyers. After a year of carrier flying, he took postgraduate work in aeronautical engineering at various Naval and civilian institutions, earning a master's degree in 1934. Subsequently, and during World War II, he served in practically every phase of Naval aviation.

There are eight operating departments aboard a carrier, each divided into a number of divisions. The Executive Department is small, and includes the executive officer, who is second in command of the ship; the chaplains; the training and education officer; the administrative officer; the ship's secretary; the personnel officer; and about 70 enlisted assistants. The largest departments are Operations, Air, Gunnery, Engineering, and Supply. Finally, there are the Medical and Dental Departments. In wartime, a total strength of 3500 would be required to man all departments.

The Air Department is the only one peculiar to a carrier. With 14 officers and more than 400 enlisted men, it is charged with launching and landing operations—this alone requires

more than 200 persons—and with the servicing, maintenance, and repair of aircraft. Divided into a flight deck crew and a hangar deck crew, the men wear T-shirts and nylon helmets, with color combinations standardized according to job specialties. Plane directors and spotters—top technicians of the crew—wear yellow. Their complicated system of hand signals is standard throughout the Navy and also is used in the Air Force. Gasoline handlers wear red jerseys and helmets. Ammunition handlers wear red with a black stripe. Catapult and arresting gear men wear green; and plane pushers wear blue. Each plane has an enlisted "plane captain" who nurses it through its daily routine; and these men wear brown.

During launchings and landings the deck presents a colorful and busy scene. Technicians go about their jobs swiftly and surely. A hundred men on the flight deck work intently among the 50 or more planes—all with propellers spinning—while other planes are lurching in for a landing or plunging down the runway for a take-off. Below, on the hangar deck, planes parked inches apart are being warmed up and moved to the elevator. The elevator, with two seven-ton planes aboard, can make the 30-foot ascent in eight seconds.

Planes, with wings folded, are spotted on the hangar deck and on the flight deck at precise intervals that allow barely enough room for a man to walk between. The plane taxis, or is pulled by a deck tractor, to its approximate location; but the final exact positioning must be done by the plane pushers, 15 to a plane.

Refueling and ammunition loading can be done on either deck, as can elementary maintenance and checking. Major repairs and maintenance are handled on the hangar deck. The greatest danger is the fire hazard, with thousands of gallons of high-octane gasoline being handled nearly every day. The "smoking lamp" is always out on the flight and hangar decks and in many other parts of the ship.

The Air Department also includes an Air Group, normally made up of four squadrons—of 125 officers and men and 25 planes each—plus a number of special-duty planes. Currently, for administrative training purposes, the Air Group is divided into five squadrons of 20 planes each. In order to facilitate rotation of squadrons, the Air Group operates largely as an autonomous organization. Air Group headquarters includes only the group commander, a flight surgeon, a maintenance officer, and a landing signal officer. Administrative and opera-

tional activities are decentralized largely to the individual squadrons. Since every officer in a squadron is assigned to a plane and is expected to be in the air whenever the squadron flies, there are no purely executive or administrative assignments. Each officer has collateral duties "on the ground." The ranking pilot is commanding officer, and the next senior is executive officer. The squadron is divided into five departments—executive, operations, maintenance, materiel, gunnery—with the twenty pilots each filling one or more jobs.

The squadron commander is responsible for the operational availability of all his planes. Most of the hundred or so enlisted men in each squadron are maintenance technicians, trained and equipped to handle practically any problem. Heavy maintenance, such as engine and wing changes, is done by squadron technicians, with the aid of maintenance personnel assigned to the ship. The carrier's shops, staffed by 70 or 80 technicians, provide the equivalent of air base maintenance. The ship carries thousands of replacement parts, from spare wings to nuts and bolts, stocked according to master quotas. In all, the Air Department, including the Air Group, accounts for nearly a third of the personnel aboard.

The Operations Department of the ship is the nerve center, providing such vital services as communications, navigational data (for ship and planes), combat intelligence, radar warning, weather reports, and so on. Seventeen officers and 150 highly skilled enlisted technicians man this department. In wartime, the number would be considerably greater.

The largest ship department is Engineering. Its 25 officers and 550 enlisted men operate and maintain the utilities and power plants. The ship's four 12-ton propellers are driven by four power plants, each capable of producing more than 50,000 horsepower. These plants are distributed throughout the ship, so as to reduce vulnerability during combat. Each is an independent unit. The engine farthest forward, approximately amidships, drives a 21-inch propeller shaft more than 400 feet long. Dispersal, and duplicate facilities, are the rule throughout the ship, from the galleys to the flight control towers, thus assuring operability in case of extensive damage to the ship.

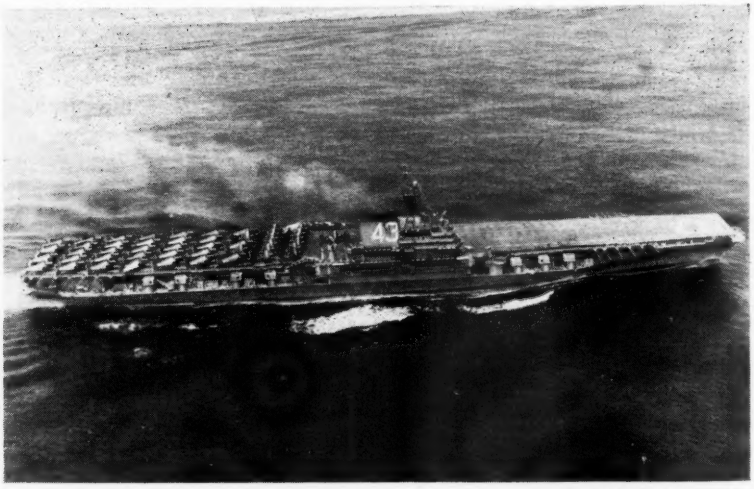
Nearly three million gallons of fuel oil, enough to heat 3000 homes for one year, can be stored in 200 tanks distributed throughout the ship. More than 200,000 gallons of fresh water can be produced daily in the evaporating rooms—enough to

supply 1400 homes. The daily requirement is 36 gallons for each man aboard, to provide for bathing, cooking, laundry, and so on, in addition to operating needs. Electrical maintenance is provided for the ship's 2000 motors, 2000 telephones, 11,500 lamps, 600 loud speakers, 290 ventilating systems, 22 air conditioning systems, and hundreds of other complicated units. There are 2500 miles of insulated copper conductors and 242 miles of electric cable.

From the Damage Control Center—a room deep in the heart of the carrier—direct line communication is maintained to every part of the ship. The communications system is in triplicate—conventional telephone, loudspeaker, and voice-power telephone, which can be operated if the ship's electrical system goes out. The center gets an immediate report from any part of the ship that is damaged; it reports to the bridge the extent of damage, and directs necessary control measures. Counter-flooding—the deliberate flooding of spaces in one part of the ship to counterbalance other spaces flooded as a result of enemy action—is directed from this room. A detailed chart shows the damage control officer exactly where and how much to flood in the event of damage to any part of the hull. An automatic sprinkler system extends throughout the ship. On the hangar deck alone, it can cover every inch of the deck with a water spray of more than 40,000 gallons a

Staff Photograph

Catwalks along both sides of the flight deck provide shelter for flight deck technicians during take-off and landing operations.



U. S. Navy Photograph

The *Coral Sea* under way in the Atlantic.

minute. In the Damage Control Center is an electric panel connected with every ammunition magazine on the ship. A warning light and a buzzer react automatically any time a magazine becomes overheated.

The Supply Department, organized in five divisions, with eight officers and 370 enlisted men, conducts a tremendous business operation. The general stores division supplies the ship with everything from pencils to spare gun parts. The commissary is the largest division, with 181 cooks, bakers, butchers, messmen, and servers. The stewards and cooks group provides mess personnel for the officers' and warrant officers' wardrooms. Finally, there is the ship's stores, clothing, and small stores group. It issues clothing and operates the laundry, tailor shop, barber shop, soda fountain, and ship's stores (equivalent to the Army post exchange). Enlisted men pay a flat fee of 25 cents a month for laundry, haircuts, tailoring, and most shoe repairs. Necessities are sold at cost in the ship's stores; and such items as fountain pens and cigarette lighters are sold at a slight profit. Yet, a monthly profit of more than $3000 often is turned over to the ship recreation fund. The laundry does more than 80,000 pounds of rough dry and 5000 pounds of finished work a week. Every man gets six-hour laundry service once a week. Cooks and other mess personnel required to wear white get daily service.

Except in emergency, the ship receives all of its fuel, food, and other supplies directly from the United States, even when in foreign waters. Cold storage capacity for food approximates the needs of a small city. Ovens can roast 1000 pounds of meat at one time; dough mixers hold four barrels of flour; and 10,000 cups of coffee can be brewed at one time.

The *Coral Sea* carries 14 five-inch guns (usable as antiaircraft or as surface artillery), 40 three-inch guns, and 28 20mm guns. To operate and maintain these, the Gunnery Department has 20 officers and more than 500 men. The 66-man Marine detachment, aboard as ship's guard, operates the 20mm guns and is under the control of the Gunnery Department for that purpose only. Dry-run gun drills are held almost daily; and drills with live ammunition are conducted frequently.

The Medical and Dental Departments are compact and complete. The Medical Department, with two surgeons and 21 corpsmen, operates a sick bay of 64 beds, two private rooms, and a main operating room. Located throughout the ship are seven other operating rooms, 58 collecting stations, and 184 first aid stations. In an average month, 25 operations are performed. The Dental Department, with three dentists and four enlisted technicians, is equipped with four chairs and X-ray equipment. It averages 450 patients a month.

Off-duty, a ship-wide athletic program is carried out, with five intramural leagues of eight teams each competing in volleyball, softball, basketball, and individual sports. The athletic officer is developing a soccer team, in anticipation of bids from foreign teams during the Mediterranean cruise this summer. Other varsity teams—in football, basketball, softball, baseball, boxing, golf, tennis, bowling, and swimming—compete regularly with teams of other ships and of shore installations.

As part of the off-duty activities, a complete USAFI education program is available. Currently 78 men are enrolled, with increases expected when the ship goes on cruise and the normal shipboard routine begins. Many men have received high school diplomas since joining the *Coral Sea;* and one chief gunner has completed requirements for a law degree, through correspondence, and is the ship's legal assistance officer, in addition to other duties. Special classes in French are beginning, and others are planned in Italian and Spanish, with qualified linguists among the men serving as instructors.

A systematic on-job training program goes on continuously, available to every man. Division officers are primarily re-

sponsible for the operation of this program, under the guidance of the ship's education officer. All enlisted men have frequent opportunity to take examinations for promotion, under the Navy-wide career guidance program. In March, 371 of the crew took the fleet competitive examination for petty officers, and 216 passed. Appointments will be made on a fleet-wide basis, to fill vacancies.

In the shipboard routine, a touch of battle realism frequently is provided by a full-dress General Quarters drill. After the alarm is sounded and the men take battle stations, an announcement comes over the public address system: "A large group of enemy aircraft is on the way. An atomic or chemical attack is anticipated. Check the ship for gas-tight envelope!" Then the chaplain takes over the microphone and broadcasts a running account of the battle from the bridge, for the benefit of the vast majority of the crew who are below decks during General Quarters. He may report "a torpedo hit under water at the first platform level, frame 135, port . . . Attention Engineers: The port steering engine is demolished—all the personnel have been killed . . ." and so on, perhaps until the bridge is hit and the captain, chaplain, and most other key personnel are reported killed. After a silence, announcement is made that the auxiliary control room has taken over the ship, with the executive officer in command. Throughout, the deck is in a flurry of activity, with fire and gas decontamination crews rushing to hit areas, litter bearers picking up casualties and moving them below; and everyone aboard getting training in the part he would play in time of war.

Thus, life is never dull aboard a carrier. Whether anchored in a large harbor or cruising thousands of miles at sea, it is a busy, teeming city. The men take pride in knowing that they are part of a compact, efficient community that is prepared at any time to fulfill its mission of winning battles. Every man has his job; and every job is important. There isn't room for supernumeraries or excess baggage. If one man falls down on his assignment, a shipmate has to fill in.

In the booklet given to every man who joins the *Coral Sea*, the carrier team spirit is epitomized: "We can all expect to work like the devil for months or years to get ready for battles that will be fought and finished in minutes. When those minutes come, we are going to win, or lose, depending on how much we know and how well we can do our jobs. Now is the time to start learning."

# EDUCATION PAYS OFF IN TROOP TRAINING

*By*

COLONEL WALTER E. SEWELL

THE effect of World War II on military training was indeed convulsive. Vehicles and weapons increased in number and complexity and, simultaneously, the time available for training decreased. This trend has continued in the postwar era, accentuating the problem of teaching men more in a shorter time. With training schedules already crowded, the troop commander's task can be accomplished on schedule only if his men can absorb more advanced subject matter at an increased rate. In order to accomplish his training mission, the troop commander, perforce, must lean heavily upon the Armed Forces Education Program.

Two elements determine what a man can be taught and how fast: (1) his native ability and (2) his background of facts, vocabulary, and concepts; that is, his education. At the basic training level particularly, rate of learning is determined more by a man's education than by his native ability. Although the commander can do nothing to alter a man's native ability, he can do much about his education. By establishing and maintaining a good education program in his unit, the commander can raise the educational levels of his men, and thus increase their ability to absorb the basic training program.

How much education should a trainee have in order to absorb a particular program of training? While this question has not been answered definitively, even for basic training, progress toward its solution is being made.

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Early in World War II, it was decided that a man with less than a fourth-grade knowledge of the three Rs could not be trained effectively as a soldier. Consequently, Special Training Units were established in the Army. Illiterates were given instruction in reading, writing, and arithmetic, and were released for basic training only upon attainment of the fourth-grade level.

Currently, minimum General Classification Test scores are required for initial enlistment. As a measurement of one's ability to learn, these tests are quite satisfactory. But since they do not indicate accurately the amount already learned, they are not satisfactory criteria for determining educational levels. Even if it were possible to examine separately those items of the GCT which might reasonably be presumed to measure educational achievement—the questions at each level are so few, and increase so rapidly in difficulty, that they could not be used to differentiate elementary grade levels accurately. This is particularly true in the middle and lower elementary grades, the areas where educational shortcomings are the most critical.

Because the GCT does not measure formal education, there are men in units today who are below fourth-grade education, by actual examination. Existing regulations provide machinery for discharging inapt or inadaptable men, but this solution is considered a last resort.

The first recourse of the commander is the Armed Forces Education Program. The Department of the Army now authorizes duty-time education for those below the fifth grade elementary level. Through the resources of the Armed Forces Education Program, the commander can gradually raise most of his men to the required level. In instances where this fails, the commander can establish evidence sufficient to separate the constitutional illiterates. Duty-time education through the elementary level is gaining ground throughout the Army. From a purely military point of view, this is time well spent. For if the commander can raise the educational levels of certain men in his unit, he will vastly increase the scope of training effectiveness.

At the present time, there are, among the average group of trainees, men ranging from illiterate to one or more years of college. The instructor finds that it is virtually impossible to teach effectively even the purely manual skills to such a heterogeneous group. The task is complicated, moreover, by

the fact that the ratio of brawn to brain effort, in all military training, is rapidly decreasing.

Psychologists have found that the instructor's problems increase rapidly with the wider spread in the educational backgrounds or intellectual abilities of his students. Problems encountered in normal teaching situations—motivation, comprehension of subject matter, study assignments, the necessity for making detailed explanations, and the matter of standardizing achievement tests—are aggravated.

As the spread in trainee ability increases, the learners are confronted with added difficulties. For those at the low end of the scale, "the work is too hard; the instructor doesn't explain enough; he goes too fast." Others make quite the opposite complaint—"the work is too easy; the instructor stops to explain things any one should know; the work drags."

The limited vocabularies of the men with little schooling preclude their grasping even the minimum essentials of some of the required courses. Many of these men understand but a few hundred of the simplest words. It is therefore highly unlikely that they will understand, for example, the terminology normally used in teaching defense against chemical attack—chemical, measures (means), mission, biological, encounter, dissemination, detection, behavior (chemical and physical), protective, functioning, 4-phase, valve, decontamination, sentinels, exposure, sanitary procedures. To be understood, such terms must be defined in words of a fourth-grade vocabulary, a process which requires a prohibitive amount of time.

Many concepts, now a part of the basic training course, are too abstruse to be assimilated by soldiers having an incomplete elementary school education. The instructor of the elementary course in map and aerial photograph reading, as another example, works against insuperable odds in attempting to clarify such concepts as: grid coordinates, overlays, symbols, contours, map scales, orientation, and the like. A course of this type, therefore, must be extensively revised for the special benefit of those at the lower levels. Even so, the revision must frankly allow for the fact that most of the concepts in cartography far exceed their abilities to comprehend. Moreover, training such men individually increases administrative problems in scheduling, use of equipment, and classroom space.

From the standpoint of the commander, instructor, and student alike, training effectiveness is enhanced by forming groups of comparable educational levels, of sufficient size for

efficient handling. A three-way division is perhaps the most practical arrangement—those below fifth-grade completion, those above fifth but below eighth-grade completion, and those above eighth-grade completion. Through placement tests, the educational level of each trainee readily can be determined. On the basis of this evaluation, the commander then can provide military training adapted to the educational levels of the three main categories of trainees.*

By thus relieving instructors of those students most difficult to teach, the main training groups can be enlarged as much as 50 per cent, with no deleterious effects. Instructional efficiency is increased. The tempo of instruction and training can be stepped up, with generally good results. For psychologists have shown that men at the eighth-grade level acquire knowledge and skills in from one-half to one-fifth the time that the fourth-graders require for the same accomplishment. Thus, by conservative estimates, the present basic course might be speeded up by 15 to 25 per cent, with no loss of proficiency in the case of average and better trainees.

As for the lower-level men, training in separate groups actually improves their morale. Not only are they given new opportunities for successful competition; they also receive more individual attention. Demonstrations are more frequent, and the lessons are shorter and easier. Morale of the upper-level soldiers improves, too, for their work becomes a challenge. They are not bored with elementary details, their problems move quickly from the known to the unknown, and they feel that they are getting somewhere.

For those already at the high school level, the Armed Forces Education Program fills a genuine training need. The Army Career Guidance Program puts added emphasis on education above the elementary level, insofar as additional formal education will naturally assist enlisted men in their competitive promotion examinations. In addition, some service schools list specific high school courses as prerequisites for entrance. Finally, in certain military assignments, high school graduates are preferred, if not required—notably on ROTC and civilian component duties, attache and military mission assignments.

Thus, on every level, from the elementary to the most advanced, the Armed Forces Education Program proves its worth. That education pays off in troop training is a truism that has real meaning to commanders in the field.

* These suggestions present the personal views of the author, and not necessarily the official views of the Department of the Army.

# VICTOR vs AGGRESSOR IN EXERCISE TARHEEL

*By*

MAJOR LEILYN M. YOUNG

THE paradrop of an airborne regimental combat team was synchronized with a general frontal attack by the 82d Airborne Division. A special force of heavy tanks and armored infantry exploited the attack by a deep ground penetration. Resistance was destroyed, and Task Force Victor swept forward to demand unconditional surrender from the invader.

These tactical operations climaxed the final action-filled hours of Exercise Tarheel, the Third Army's large-scale 30-day training exercise in the Fort Bragg-Camp Mackall area.

Assembled at the Carolina reservations were 27,000 Army troops and some 1700 Air Force pilots and airmen. Air Force units were sent from as far distant as McChord Air Force Base, Tacoma, Washington; and Army units came from all but the Sixth Army area.

Tarheel was conceived as a sequel to Exercise Assembly—the action staged at Camp Campbell, Kentucky, in April and May 1948. A special task force of the type assembled in that exercise would now be put through its paces. Units would be trained in troop movement and field operations under simulated battle conditions. Operational training also would be provided for Headquarters V Corps and corps troops. The exercise, lasting from 21 April to 20 May 1949, would stress various phases of ground action after assembly of a task force.

Third Army developed the plan for Tarheel, under a directive from the Office of the Chief, Army Field Forces. Lieutenant General Alvan C. Gillem, Jr., Third Army commander, was in command of ground operations, and Major General Robert M. Lee, commanding Tactical Air Command, was in charge of air participation. Lieutenant General John R. Hodge, commander of V Corps and Fort Bragg, was exercise director as

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well as commander of Task Force Victor—the United States Army forces; Colonel Charles C. Sloane directed Aggressor Force; and Major General Glenn O. Barcus, commander of the Twelfth Air Force, was in charge of Air Task Force Eagle, the organization comprising the tactical air units supporting the ground action. Task Force Eagle included, along with eleven squadrons from the Continental Air Command, one squadron from the Strategic Air Command and two Air National Guard fighter squadrons. Headquarters of Task Forces Victor and Eagle were set up at Camp Mackall. Here a Joint Operations Center—the nerve center of tactical air operations—also was established.

Two-thirds of the 30-day field exercise period was devoted to unit training at the battalion and regimental combat team levels. Arriving early in April, a 100-man Aggressor cadre from The Ground General School, Fort Riley, oriented men of the 3d Armored Cavalry Regiment (Fort Meade), and its supporting troops, in the background of Aggressor—the simulated enemy force—and began training them in Aggressor tactics. During small unit training, groups of these men played enemy against United States battalion and regimental combat teams. They were then organized into Aggressor forces for the main exercise, beginning 11 May.

At 2130 on 11 May, Aggressor paratroops simulated a combat drop at Pope Air Force Base, Fort Bragg. With the troops of Task Force Victor assembled at Camp Mackall, there were only service troops remaining at Fort Bragg to repel the invaders. Committed, they were unable to withstand Aggressor.

Alerted to the invasion, the commanding general of Task Force Victor obtained authorization to commit his force to the attack. Higher headquarters also released to the Task Force two infantry divisions, in place—the 31st at Fort Jackson, South Carolina, and the 3d at Fort Monroe, Virginia. Throughout the exercise, these two divisions were paper units and were represented in the field by skeleton staffs.

Only sketchy information about Aggressor successes had reached Task Force Victor when all communication between Fort Bragg and Task Force Victor was severed at 2330. However, plans to attack and recapture Fort Bragg were already in motion. Earlier, the 82d Reconnaissance Troop had been sent from Camp Mackall toward Fort Bragg to provide a security screen and to establish contact with Aggressor. Now

the commander of Task Force Victor ordered the 82d Airborne Division—major unit of his force—to advance toward Pope Air Force Base. Such rapid movement resulted during the early morning hours of 12 May that by 0700 two Airborne Infantry regiments—the 325th and the 505th—and the 82d Reconnaissance Troop were in contact with Aggressor along a fluid, ten-mile front ten miles northeast of the Mackall assembly area.

During the day, field artillery, tank, and antiaircraft artillery battalions of Task Force Victor continued to move toward the front. Aggressor, meanwhile, was rapidly building up a strong force, containing both an armored and an infantry division and an airborne and a field artillery brigade, with supporting troops. Along the fluctuating front, the United States forces slowly pushed forward.

On the morning of 13 May, some pressure was relieved from the 82d Airborne Division, as its front was narrowed by the arrival and commitment of the 3d Infantry Division on the north and the 31st Infantry Division on the south flank. During the night, however, Aggressor executed a general with-

U. S. Army Photograph

**Members of the 376th Field Artillery Battalion coordinate and plot fire.**

U. S. Army Photograph

Paratroopers approach the ground in Exercise Tarheel.

drawal and the troops of Task Force Victor lost contact with the enemy. During 14 and 15 May, the hitherto constant and rapid United States advance was disrupted by localized attacks and rapid withdrawals by the enemy.

Operations officers of Task Force Victor, meanwhile, were planning a knockout blow. Plans were completed for a paradrop, about four miles behind the Aggressor lines, of two battalions of the 504th Airborne Infantry Regiment, a battery of the 456th Airborne Field Artillery Battalion, and two sections from the 503d Airborne Antiaircraft Battalion—units that had comprised the division reserve during the earlier fighting. Simultaneously, a general attack was to take place along the entire front of the 82d Airborne Division. A special striking group—Task Force Zebra—was to be assembled in reserve, to exploit any opportunity to break through and establish ground contact with the paratroops.

At 0630 on 17 May—a 24-hour administrative break had intervened—the paratroop force of Task Force Victor dropped according to plan. Jumping from C-82 Flying Boxcars, 1200

troops were followed in 30 minutes by a delivery, in sixteen CG-15 gliders towed by C-82s, of supporting units and equipment, including ¼-ton trucks. Simultaneously, at 0630, the general attack by the 82d Airborne Division began.

The day was one of heavy fighting. Late in the day, Task Force Zebra crashed through Aggressor resistance and established—then lost, then regained—ground contact with the airhead. The paratroop force was resupplied by air the following morning.

Constant pressure by the 82d Airborne forced Aggressor to withdraw eastward toward Pope Air Force Base, the original enemy airhead. By 1330 on 18 May, Aggressor—its limited gasoline supply virtually exhausted—accepted unconditional surrender.

Throughout the exercise, Task Force Eagle supported the ground actions with 225 aircraft, including both jet propelled and conventional fighter-bombers and light bombers, jet reconnaissance aircraft, troop carriers, and gliders. Its activities were coordinated with ground operations through the Joint Operations Center at Camp Mackall. This center controlled the flight of aircraft operating from fields as far distant as Langley Air Force Base, Virginia. The air effort—1410 sorties of all types in 353 missions—included dive-bombing and strafing attacks on Aggressor troops, emplacements, and armor;

U. S. Army Photograph

An 82d Airborne Division rifleman fires from his foxhole.

and the intercepting of Aggressor aircraft in flight. During the exercise, many aerial photography reconnaissance missions were flown. Light bombers were employed in numerous rocket strafing and bombing attacks. Jet fighters flew cover for the troop carriers and gliders and patrolled the airhead against Aggressor air attack.

The proved World War II method of ground-to-air control of aircraft in flight by front-line Tactical Air Control parties was used extensively. Ground unit requests for special air strikes on designated targets of opportunity were speedily fulfilled. Advancing this technique one step further, Tarheel brought into play an improved method of control. Five pilots, specially trained in a two-week course at Fort Benning, jumped with the paratroops. Using portable radios, instead of the usual jeep-mounted aircraft radio sets, these pilots were operating as Tactical Air Control parties within minutes after jumping.

At a critique on 20 May, General Hodge, Army exercise director and commander of Task Force Victor, praised the hard work and high morale of the troops. Among the lessons learned were: improved control of units by all leaders; and the aggressive off-road maneuver of small units during the large-scale operation. Shortcomings noted were: a shortage of umpires; poor coordination between air and ground umpires in assessing casualties against ground troops as a result of air strikes; and a lack of maneuver by small units early in the exercise. The Aggressor commander called attention to the indifferent security maintained by soldiers of Task Force Victor. Prisoners of war usually talked freely and often were found to possess documents or letters which should have been destroyed. Many Aggressor agents—both in civilian clothing and in United States uniforms—were allowed to pass, frequently unchallenged. Intelligence personnel of Task Force Victor, on the other hand, were able to determine the Aggressor order of battle from prisoners of war and captured documents.

Tarheel marked the fourth full-scale appearance of Aggressor—the simulated combat force of a mythical invader that provides realism in maneuvers. The idea of providing an Aggressor Force was conceived in 1945, and was later developed by three officers, Colonels Charles C. Sloane, A. S. Newman and C. W. Morrison.

Wearing distinctive tufted helmets, Aggressor troops are outfitted in unserviceable Army uniforms, dyed a jungle green

and decorated with bright shoulder flashes and insignia of rank. Aggressor's flag is emblazoned with the "triagon" symbol —a green triangle on a field of white—that also is used to identify Aggressor vehicles and aircraft. Specially designed amplification devices are used to produce realistic sounds of battle.

During Tarheel, Aggressor Force dropped thousands of propaganda leaflets on Task Force Victor. Composed and printed in the field, these leaflets often were based on developing combat situations. Their principal appeal was that "Aggressor Treats Prisoners Right"—United States soldiers who surrendered would receive hot showers, good beds, hot meals, and would be reunited with their families. At the front, Aggressor employed loudspeakers to broadcast messages designed to induce Task Force Victor troops to surrender.

Task Force Victor—although demanding and receiving unconditional surrender from Aggressor—was unable to capture all the invaders. Some Aggressor leaders and troops escaped, presumably to bases in the Caribbean. There, poised in their strongholds, they remain a potential threat to the security of the United States until the day when—in some future training exercise—the war-making capacity of Aggressor Force is rooted out and destroyed.

U. S. Army Photograph

Gliders disgorge jeeps during Tarheel. Note opening door on near glider.

# MAKING ARMY MOTION PICTURES

*By*

LIEUTENANT COLONEL BERTRAM KALISCH

AND

SAMUEL J. ZISKIND

STABBING through a shadowy tangle of guy wires, scenery flats, and overhead catwalks in the cavernous stage, a shaft of arc light transfixes a camera crew in action. The camera and its operator move slowly on a mobile platform, probing every corner of the bedroom set. The lens lingers on the bloodstained chair and the overturned table, in a scene that shortly will be used for training the Army's criminal investigators in the collection and preservation of evidence. Nearby, on a set that recreates a tunnel at Corregidor, enlisted men are stacking ammunition boxes for a Chaplain Corps film, "From Whence Cometh My Help." In a far corner, a railway car in cross section is being dismantled, and a bomb-blasted building is rising magically in its stead. Such are the typical projects unfolding on the block-long central stage at the Signal Corps Photographic Center.

In an enclosed sound stage, linguists are enunciating Spanish-language commentary and dialogue into microphones, taking their cues from the lip movements of figures projected on a screen. At a panel board in a control booth, technicians are blending and synchronizing dialogue, narration, sound effects, and background music for a Troop Information film. In the animation department, girl artists, working with hairline precision, are sketching varicolored diagrams on transparent sheets. Sixteen of these sketches, when reduced, will make a single foot of film in a sequence on defense against atomic radiation. In the film vaults, a librarian is combing the files for strafing scenes that will illustrate a training film on ground

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action against aerial attack. In twenty cutting rooms, technicians and film editors are scanning film, piecing together the best sequences, and dubbing in completed sound tracks.

In the conference room, production and studio chiefs are threshing out plans for filming a training subject at The Infantry School. Afield, a camera crew is already on the scene at Fort Benning, taking location shots for "The Rifle Squad in Attack." In Maryland, another camera crew, on night-time operation, is filming the feeding habits of rats, documenting for the Surgeon General's Office a study of rodent control. Other crews are on location at Fort Knox; Fort Leavenworth; Fitzsimons General Hospital, Denver; and the Columbus (Ohio) Quartermaster Depot. Two camera men are in Puerto Rico, gathering scenes for a Caribbean sequence; and two others are in Europe on production reconnaissance.

All of these far ranging, kaleidoscopic activities fit into a pattern. They are part of a coordinated, smooth functioning production program that makes the Signal Corps Photographic Center at Long Island City, New York, the largest producer of educational and training films for the arms and services. In actual footage released, the Center's production tops that of any Hollywood studio. Its laboratory processes more than four million feet of film a month—1½ million feet in 35mm negatives and 2½ million feet of prints.

During a typical week, the Center had 233 productions in work—60 in the writing stage, 55 in actual production, and the remainder in scenario or finished print form, awaiting clearance by the requesting departments and agencies. Last year's production was roughly 600 reels. Included were reels of foreign language recordings, in which existing Army training films were renarrated in Spanish and Portuguese, to serve the needs of the Western Hemisphere defense program. The productions ranged in length from a one-minute newsreel trailer, announcing Army Day, to the 8-reel "Shades of Gray," a penetrating analysis of the problem of rehabilitating neuropsychiatric patients.

The Center's productions excel not only in gross footage, but in quality as well. Twice in the past three years, SCPC productions have won the coveted Oscar for the outstanding documentary short of the year. In 1947, "Seeds of Destiny" won the award; and this year, "Toward Independence," a Medical Department film on the rehabilitation of paraplegics.

The Center occupies facilities that, before 1942, comprised

U. S. Army Photograph

**Shooting a key scene for "Shades of Gray" on the main stage at the Signal Corps Photographic Center.**

the Paramount Eastern Studio, the largest and best equipped studio in the East. Approximately 55 officers, 175 enlisted men, and 700 civilians make up the personnel at this unique Army post. About half are specialists—many of them reservists, veteran combat photographers of World Wars I and II—engaged in actual production activities. On occasion, actors for speaking roles are recruited from among veterans on the Broadway stage; and Fort Dix and Fort Totten are drawn upon when large formations or crowd scenes are required.

There are no big names, no sky searching beacons, no colossal opening night fanfare at the Center. For here the art of entertainment, Hollywood's chief stock in trade, is only a means to an end—the production of training and informational films, on order, for the arms and services. The acclaim these Signal Corps specialists seek is not in box office renown or critics' praise. Rather, their camera sights are focused on a far different objective—the battleground of any future war, where the principles and techniques they portray erupt into reality.

Films dealing with the proper wearing of the uniform, or with the combat records of divisions in World War II, for example, are designed to instil pride both in service and in unit. Other films, on the techniques of vehicle maintenance, elements of first aid, or the operation of the shoulder-fired recoilless rifle, help develop skills that have life-and-death significance in battle. Recent titles include such topics as: Summer Mountain Movement and Bivouacs, Field Artillery Sight Tests, Passage by Armor, Troop Movement by Air, the Small Infantry Tank Team, and Exercise Yukon. For the Veterinary Corps, the Center produced films on Food Handling and Storage. For the Medical Department, it pioneered in the production of a unique animated film in color showing the biological and chemical reactions within the cell. For the Armed Forces Information and Education Division, the Center produced films on Problems of Peace in Asia and in Europe, Operation Snowbound, the Sky Jeep, and the Officers' Information Program. The Chemical Corps got a film on the Technique of Using Smoke; Ordnance, on the Fundamentals of Ballistics; the Quartermaster Corps, on Materials Handling Methods; the Corps of Engineers, on Multiplex Installation and Repair; the Intelligence Department, on Unit Censorship and Safeguarding Military Information. The story of CARE was prepared in a variety of tongues for oversea release.

Any arm or service may request a training film. An outline of the proposed coverage is worked out between the requesting agency and the Army Pictorial Service Division, with the Office, Chief, Army Field Forces participating if field training is involved. The Logistics Division analyzes the proposal to determine its essentiality. Once production is authorized and priority is determined, the Chief Signal Officer directs the Center's commanding officer to begin production.

A staff writer is assigned to develop the theme. A project officer—with functions similar to those of a producer—also is assigned. He obtains from the requesting agency the services of a technical adviser, who is responsible for the film's technical accuracy. The final presentation may be of the factual, dramatic, or demonstration type. Or the production may be of the "nuts and bolts" variety—explaining elementary mechanical procedures in orderly fashion. In every type of presentation, clarity and simplicity are the twin goals.

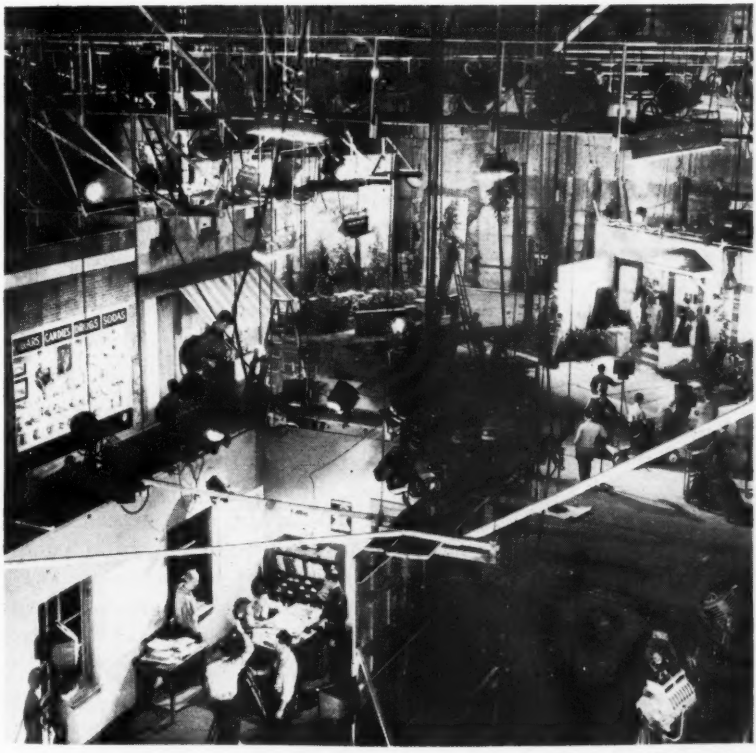
In drafting the scenario, many of Hollywood's cherished stand-bys and stereotypes must be discarded. Because each film is directed to a specialized audience, it must, first and foremost, carry conviction and authenticity. Big name actors are never used, since audiences tend to identify the actor with his popular entertainment roles; and this diverts attention from the film's informational content. Speaking parts usually are assigned to active duty personnel, or to reservists with acting experience—men who actually may have served as S-2s or platoon leaders, whatever the role specifies. Comedy and humor—another stock device—are rarely used. Sometimes instructional films may be shown several times to the same trainees, and a gag twice repeated is likely to fall flat. Moreover, whatever humor remains is likely to evaporate when the film is rescored in Japanese, German, Spanish, or Portuguese, as is frequently the case.

The resulting scenario is checked for practicability in production. The project officer consults with the production group—studio, animation, and special effects—to determine whether unusual effects and equipment are required. A supermammoth spectacle, as originally written, may be scaled down, or footage from the Center's voluminous library of stock scenes may be substituted, to make a low-budget, but nevertheless dramatically effective training film.

As soon as the scenario has been cleared with the requesting agency, the project officer meets with the chiefs of the

studio, camera, and sound branches. A director and unit manager are assigned and details of production are decided.

The average production crew, in the studio or on location, consists of eight to twelve highly trained technicians. The unit manager—who represents the project officer on location—acts as liaison officer with the post commander, and is responsible for the off-set administration of the crew. The director interprets and translates the words of the scenario into suitable action and dialogue. The assistant director is more than an assistant; he expedites the operation and arranges the shooting schedule so that all scenes with similar backgrounds can be shot in succession. On special assignments, the director may be the cameraman as well. On larger productions, the cameraman may have an assistant who



U. S. Army Photograph

Four sets in use at one time on the main stage; three depict outdoor scenes, and one indoors.

operates a second camera, so as to get two angles of the same scene. In addition, there are usually two or more grips—the men who function as combination carpenters, electrician's helpers, and jacks of all trades. The gaffer is the head electrician, responsible for lighting on the set. And there is the prop man—custodian and provider of wardrobes, equipment, and special paraphernalia.

The Center maintains its own carpentry, electrical, and model building shops. As many as four sets have been set up on the Center's main stage and filmed simultaneously, with sound and dialogue dubbed in later. For close-up scenes in a Military Police film, a corner of Grand Central Station and a Pullman car in cross section were reconstructed. To provide a South Pacific background, a jungle of foliage, vines and creepers was duplicated. In one of the more elaborate sets, depicting the main street of a German town, a formation of troops from a nearby Army post marched through a crowd. The actor-spectators were civilian employees of the Center who volunteered to become actors for an hour. In the final film, the crowd scenes were interspersed with long shots from actual war films, for a total effect that normally could not be duplicated for thousands of dollars.

The head prop man and technical adviser collaborate in assuring an authenticity of scene, locale, and equipment that will ring true. In addition to a warehouse full of captured enemy uniforms and equipment, the prop department stocks complete wardrobes of all types of United States Army uniforms and equipment—including Aggressor, paratroop, mountain, airborne.

Technical advisers and researchers are kept busy finding the answers to such questions as What uniform was worn in the Canal Zone in 1920? The answer, incidentally, was found in newsreel shots of the day. Even within the comparatively recent span of World War II, the contour of helmets was changed, the Sam Browne belt was discontinued, and leggings were supplanted by combat boots. Constant research is necessary to keep such discrepancies from creeping into reenacted history.

The Center's library maintains a cross-index file of 14,000 military subjects, so that, if need be, the screaming descent of a dive-bomber is instantly available. Sound effects, on records and sound tracks, can simulate the roar of a 240mm mortar or a baby's whimper.

Outdoor scenes illustrating, for example, the latest in com-

U. S. Army Photograph

A camera crew on location at Fort Lewis.

munications or armored force tactics, are filmed at the Signal Center, Fort Monmouth, and at The Armored School, Fort Knox. To record test operations under arctic conditions, camera crews have ranged into the frozen wastes with Task Force Frigid; and others have filmed the atomic bomb tests at Bikini. In one scene, demonstrating the deployment of convoys in combat zones, more than two hundred vehicles and drivers were used on location.

When finally completed, a single film may be a composite of scenes in the studio and on location, actual combat scenes from World War II archives, background shots taken on maneuvers, special effects sound tracks, animation supplied by the Center's artists, and process shots—the latter blending a moving picture backdrop with studio dramatization in the foreground.

While shooting time ranges from a few days for spot news sequences to three to six weeks for longer projects, actually each minute on the screen represents many days of concentrated effort. About 8000 feet of film are exposed for every 1000 appearing in the final print. The unedited shots—known as rushes—are sent to the Center cutting rooms. Here technicians and film editors examine the product minutely for composition, quality of lighting, and dramatic effect. The best "takes" are then selected and spliced together to make a smooth running film.

In the sound studio, actual dialogue recorded on the set may be interspersed with off-screen commentary, to form the narration-voice track. In the final process, separate voice, music, and sound effects tracks—all synchronized with the action in the picture—are blended on one track. A recordist modulates the volume as required.

The finished "answer" print is dispatched to the Department of the Army, where it is reviewed by the requesting agency, the Office of the Chief Signal Officer, representatives of the General and Special Staffs, and, when appropriate, by the Office, Chief, Army Field Forces. After the master print is finally approved, duplicate negatives are made; and from these, films may be reprinted in 35mm standard size, or reduced to 16mm for classroom and lecture use. Film subjects placed on general distribution are duplicated in hundreds of copies. Prints are allocated according to troop needs, and are shipped by plane, boat, train, and courier to 134 Signal Corps Film Libraries in the field, ranging from Teheran to Manila. From these depositories, they are distributed on request to information, education, and troop training officers in the field.

More than one-third of the Center's photographic output is pieced together from the 40 million feet of film taken by Signal Corps cameramen in World War II. Currently, the Center has in production a series of 18 films—each a pictorial coverage of the combat operations of a National Guard division in World War II. A TI&E film on the Reserve Team is among the titles available to Reserve units.

Selected research and training films are available to professional groups and Government agencies. Training films on how to operate a ship's galley, for example, have been widely used by the Navy and the U. S. Maritime Service. "Toward Independence" and other documentaries are available on a loan basis to all military organizations and to any non-profit civilian group, through the world-wide network of Signal Corps Film Libraries.

Inter-service cooperation is not only a cinema theme at the Signal Corps Photographic Center. It is a demonstrated fact. The Center prepares and issues the popular "Armed Forces Screen Report"—a monthly release which features the activities of the land, sea, and air forces; and its camera crews frequently work with the Air Force, Navy, and Marine Corps on photographic missions.

# A PILOT MODEL IN UNIFICATION

*By*

LIEUTENANT COLONEL RODGER R. BANKSON

IN THE West Coast states, the Army, Air Force and Navy have joined forces to unify facilities and services in an experiment that is expected to save more than $1,000,000 a year. This economy program is designed to serve as a pilot model for similar unification programs throughout the National Military Establishment.*

In July 1948, Secretary of Defense James Forrestal named General Mark W. Clark, Sixth Army commander, as his personal representative to develop a pilot program for "utilization of facilities and services" in nine western states. New Mexico, part of the 11th Naval District, was included along with states comprising the Sixth Army Area. The directive gave General Clark wide latitude in solving the problem. It stated that consolidation, elimination or joint use of facilities in local areas was to be sought, and that immediate interim action might be taken without reference to eventual uniform policy.

On 28 July 1948, a unification headquarters was established at the Presidio of San Francisco. General Clark appointed Major General George F. Moore, United States Army, as deputy commander for the program and called on the Commander, Western Sea Frontier; the Commanding General, Fourth Air Force; and the Commanding General, Marine Corps headquarters, Department of the Pacific, for personnel. This headquarters was designated as Armed Forces Headquarters for Unification of Facilities and Services in the Far Western Area (AFHUFS).

* For a report on the overall economies achieved through the Munitions Board Committee on Facilities and Services, see "Savings by the Millions," May 1949 DIGEST.

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AFHUFS is organized as a joint staff. Its members serve on a full-time basis. Its mission is two-fold: (1) the preparation of on-site surveys, studies and reviews of specific projects; and (2) the implementation in the field of final reports and recommendations after they have been returned from the Secretary of Defense in the form of directives.

Unification of certain facilities and services, as outlined by the Munitions Board, had been initiated in the Western Area during the spring of 1948. As in other sections of the United States, these projects were handled by an area subcommittee of the Committee on Facilities and Services of the Munitions Board; but no project was carried through to completion. General Clark took over and strengthened this sub-committee and made it an integral part of the unification staff.

The Army, Navy and Air Force are equally represented on AFHUFS. It works through separate panels, each appointed to consider a specific project. A project may be selected by the Secretary of Defense or by General Clark. In the Western Area about half the projects have originated with the Secretary of Defense.

The task of preparing a project includes investigation, survey and study, to see if and how consolidation will accomplish economy and efficiency. The carrying out of the project is directed by another joint permanent staff committee which guides the efforts of the separate steering committees—each of the latter appointed to watch over the implementation of an approved project.

In all, the process—survey, study, recommendation, review, implementation and reporting—comprises eleven steps, from a rough idea to actual operation on an experimental basis. (See Chart.)

Project 5—entitled "Joint Use of Recruiting Facilities and Services in the Western Area"—is an example of the operation. The idea went into the hopper in July 1948, when the Western Area Sub-Committee, at the instigation of the Secretary of Defense, began an exhaustive survey. When the recruiting proposal reached General Clark, he called on the senior commanders of all services in the Western Area to furnish members for a panel—one member and one alternate from each service, preferably of field officer grade.

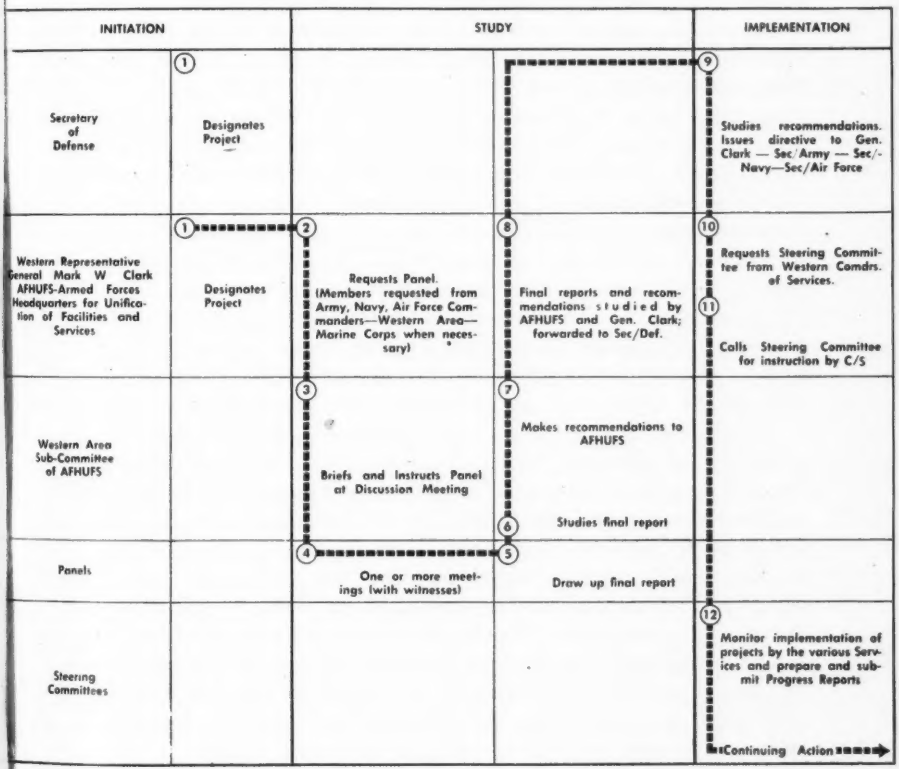
Although an officer may serve on more than one panel, each panel is appointed for just one project and is released after its recommendations have been approved by General Clark. A

panel may be recalled if the recommendations are returned by the Secretary of Defense for further study. AFHUFS designates the chairman—not necessarily the senior member of the panel, but normally the officer representing the service with the predominant interest in the project.

The panel for Project 5 first met at unification headquarters, where it was briefed by the Western Area Sub-Committee. For three weeks the panel made a thorough survey of recruiting. It studied the operation of every recruiting station of each service throughout the nine-state area. It accumulated data on how much space each station occupied, how much was actually needed, how much rent was paid, where and by whom vehicles

## Route Map

### Western Area Unification Project


INITIATION
STUDY
IMPLEMENTATION
Secretary of Defense
1 Designates Project
9 Studies recommendations. Issues directive to Gen. Clark — Sec/Army — Sec/Navy—Sec/Air Force
Western Representative General Mark W. Clark AFHUFS-Armed Forces Headquarters for Unification of Facilities and Services
1 Designates Project
2 Requests Panel. (Members requested from Army, Navy, Air Force Commanders—Western Area—Marine Corps when necessary)
8 Final reports and recommendations studied by AFHUFS and Gen. Clark; forwarded to Sec/Def.
10 Requests Steering Committee from Western Comdrs. of Services.
11 Calls Steering Committee for instruction by C/S
Western Area Sub-Committee of AFHUFS
3 Briefs and Instructs Panel at Discussion Meeting
7 Makes recommendations to AFHUFS
6 Studies final report
Panels
4 One or more meetings (with witnesses)
5 Draw up final report
Steering Committees
12 Monitor implementation of projects by the various Services and prepare and submit Progress Reports
Continuing Action

were maintained, what medical facilities and examining personnel were available and being used, and how many recruiters were required. The survey checked on the amount of monthly light and telephone bills, and on other details.

The panel gathered data and sifted it. After debate and compromise, the panel put its findings and recommendations into an exhaustive report. The Western Area Sub-Committee studied this report for a week before the report and recommendations—now agreed upon unanimously by the Sub-Committee—were sent to General Clark for review.

Less than eight weeks after the initial directive had been received from the Secretary of Defense, the recommendations—in final form, as approved by General Clark—were sent to the Secretary. Five days later the implementing directive, based on the Munitions Board's study of the report and recommendations, was back from the Office of the Secretary of Defense. The planning phase was complete. The project was now ready to be put into operation.

In this—as in all other approved projects—implementation was ordered by directive from the Secretary of Defense to the Secretaries of the Army, Navy, and Air Force. A copy went to General Clark, with orders to monitor the project. General Clark thereupon requested the services to designate members of a steering committee, to monitor the project's progress. The steering committee had no command function. It observed and reported to AFHUFS as the situation demanded, usually at intervals of ten days to two weeks. The unification headquarters staff advised the steering committee and prepared detailed progress reports, for unification headquarters and for the Secretary of Defense. The elapsed time, from the initial directive to the start of unification of recruiting facilities and services in the field, was approximately two months.

Considerable economies are expected to be effected—by joint use of office space, by common use of clerical personnel, by utilizing the same medical offices or doctors, by using standardized forms, and by joint use of vehicles and automotive services. A total of 68 recruiting station moves have been directed, which alone should account for an annual saving of $81,980. Thus far, 25 moves—consolidating office space of Army, Navy, Air Force and Marine Corps recruiting stations—have been completed, for an actual yearly saving of $22,764. When Project 5 is fully in force, it is expected that an estimated minimum annual saving of $187,569 will accrue. And this is only an average project—average in size and scope.

In the first eight months, up to April 1949, thirty-six projects had been undertaken under AFHUFS. By late March, 30 of these projects had gone through the first seven steps of the process. Six projects were in the early and middle stages.

The projects being implemented with Munitions Board approval are expected to produce an estimated annual saving of more than $1,000,000. Some of these projects: The office of the U. S. District Engineer at San Francisco probably will be moved to Government-owned space, at a considerable saving. Certain armories will be made available for the joint use of reserve components, at an estimated saving of $15,100. Certain communications facilities will be used jointly by the services, with an expected yearly saving of $65,000. The armed services will consolidate automotive maintenance facilities for an estimated annual saving of $452,718. Joint use of cold storage facilities at San Francisco and Seattle—the two ports of embarkation in the Sixth Army Area—is resulting in an annual saving of some $550,000.

No estimate of savings is yet possible on the synchronization of ammunition activities at Benicia Arsenal (Army) and Mare Island (Navy), and on the joint use of aircraft engine overhaul facilities. Certain other approved projects have not resulted in sizable monetary saving but have greatly increased efficiency and have improved relations between civilians and the military. In this category, for example, is one of the first three projects approved—the unification of public information services in the San Francisco Bay area.

After a study in which members of the San Francisco press were consulted, an Armed Forces Public Information Office was set up in the Federal Office Building in downtown San Francisco. Here, easily accessible to representatives of all news media, Army, Navy and Air Force public information officers work together to assist newsmen in their coverage of military news. One of San Francisco's large daily newspapers, editorializing on the first five months' operation of the public information project, observed: "It has worked, and worked well. Today, through a single office instead of three, the public gets fast and accurate information about its armed services without inter-service rivalry creeping into the material."

In certain instances, effective cross-servicing has been hampered by fiscal and statutory restrictions. Under present statute, reimbursement made by one department for services rendered by another cannot go to the servicing department or agency,

but must revert to the Treasury of the United States as Miscellaneous Receipts. Thus the Army-operated laundry at Fort Ord, California, has facilities sufficient to handle the laundry of the Navy school across the highway; but the hiring of additional civilians to handle the load would require an increase in funds and authorization of personnel not presently included in the Army budget. Any reimbursement made by the Navy would not be reflected in the Army budget. General Clark has recommended that such statutory restrictions be modified, to permit further savings of several million dollars a year in the Western Area.

The unification, or joint utilization, of activities initiated in the West before the inception of the AFHUFS program have accounted for important savings. One is the agreement by which the Navy handles the Army's oversea transshipment of ammunition through the facilities of the Naval Ammunition Depot at Bangor, Washington, and the Naval Magazine at Port Chicago, California. This agreement permitted the closing of the Beaver Ammunition Storage point at Klatskanie, Oregon, saving approximately $456,000 a year.

In another instance, through direct action by the Munitions Board, the Army hospital at Ford Ord is furnishing hospitalization to personnel at the Navy General Staff School, Monterey, California. This service saves the Navy the construction and maintenance of a 25-bed station hospital at an initial cost of $500,000, with an additional $15,000 for medical equipment; and saves $126,875 annually in operating costs.

A valuable by-product of the unification program is interservice cooperation and respect. Personnel of the unification headquarters staff and the panels and steering committees are being mutually educated. All are finding out what makes the other services tick.

## AID

These are the measures which would make the rulers of any nation think twice before risking war with the United States: First, potent territorial defenses, both in outlying bases and on the North American continent. Next, and perhaps this should be first, the ability to retaliate immediately with land, sea, and air forces. Another deterrent would be strong and determined allies. Fourth, the ability to enter rapidly on a sustained counteroffensive pressing ever closer to an enemy's homeland.

*Lieutenant General Manton S. Eddy*
*Commandant, Command and General Staff College*

# THEY READ FASTER AND KNOW MORE

*By*

J. M. HIBBS

CAN a student cut down on overtime study by learning to read faster? Can he be taught to comprehend more of what he reads—in a shorter time? Student officers in The Armored School Remedial Reading Course have found the answers to these questions. After thirty hours of remedial reading, they are whipping through their assignments in half the time previously required.

Realizing that the majority of Armored School students are in the same boat as most Americans—they never have been trained to read with maximum efficiency—the Assistant Commandant of The Armored School, Brigadier General Bruce C. Clarke, initiated the reading improvement program in the summer of 1948. Studies conducted at The Armored School support the findings of college and university reading clinics—that the average adult, regardless of his higher education, plods through standard reading material at a speed of only about 250 words a minute.

Various factors contribute to poor reading ability. Word-for-word reading, due either to overemphasis on oral reading in grade school or to a narrow span of recognition, slows down the speed of reading. Vocalization—silently forming each word with the lip and speech muscles—is another bar to efficient reading. The regression habit—going back to reread words in the same line—wears the reader out physically and limits speed and understanding. Mind wandering is both a symptom and a cause of poor reading. And finally, poor eyesight often makes reading a severe physical task. Training in remedial reading is designed to overcome these factors, enabling The Armored School student to read at a faster rate with better comprehension and more comfort.

Training in reading improvement centers around 28 periods

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of drill on two machines, the Tachistoscope and the Reading Rate Controller. The first, a 2x2 inch slide projector with a shutter attachment, flashes slides on a screen for periods as short as 1/100th of a second. This machine, developed by Dr. Samuel Renshaw of Ohio State University, was used with outstanding success in training pilots in aircraft recognition during World War II. The method involves practice in recognizing five, seven, and nine-digit numbers as they are flashed on a screen for periods of 1/25th to 1/100th of a second. This soon widens the student's eye span and enables him to see faster. Thus, in reading, he can take in more words at a glance.

The other half of each training period is spent on the Reading Rate Controller, developed by Dr. Guy T. Buswell of the University of Chicago. This device *forces* the student to read at

U. S. Army Photographs

**Four steps toward faster reading: the Ortho-Rater provides a ready check of visual skills; the Ophthalmograph photographs the eye movements used in reading; the Reading Rate Controller forces the student to read faster, to keep ahead of the descending shutter; the Tachistoscope flashes number groups on the wall, for practice in faster recognition and comprehension of word groups.**

an increasingly faster rate. The machine consists of a platform, large enough to hold a page from any standard-size book, and a motor-driven cover-board which moves down over the printed page. The student's job is to read ahead of the moving cover. The Reading Rate Controller permits reading speeds up to 2000 words a minute. With each successive period of training, the student adjusts the controller to a higher setting, so that he is always reading under pressure.

The Renshaw method and speed practice on the Reading Rate Controller work together to establish sound basic reading habits. With his eye span widened, the student can read meaningful word groups, whole phrases and sometimes entire sentences at one glance. He also develops faster and more precise recognition—which makes for fewer regressive eye movements. Vocalization also is minimized as the student attains speeds of more than 400 words a minute. With increased proficiency and faster speeds, the tendency toward mind-wandering decreases; the student is completely absorbed in reading.

The testing phase of the Remedial Reading Course is an important one. Standardized reading tests are given before and after training. These tests include film-strip records of each student's eye movements—before and after training. This is made possible by a cleverly constructed eye-camera—called the Ophthalmograph—which photographs actual movements of the eyes while reading. From this film record are computed the reading speed, the number of regressions and "looks" required to read a line of print, the average width of the recognition span, and the average duration of the reading pause.

Before a student begins his training in the Remedial Reading Laboratory, he is given a visual skills test on the Ortho-Rater, in addition to an Ophthalmograph test. If these tests reveal visual defects which might interfere with reading, he reports to the eye clinic for a thorough examination. A prescription for eye-glasses or corrective eye exercises help to forestall recurring headaches and unfinished reading assignments. Forty students in the Advanced Class had some visual defect, and received treatment.

Remedial Reading is a required course for Armored School students in the Advanced and Basic Officers' Classes—and it pays off.* From an average initial reading speed of 270 words

* The Department of the Army has authorized the inclusion of remedial reading instruction in courses at Army Field Forces Schools—at the discretion of the school commandant, depending on the availability of funds and provided, further, that the course is not extended for this purpose.

a minute, the Advanced Class jumped to an average of 494 words a minute, with an increase in comprehension from 70 per cent to 78 per cent. Before training, only six students were reading more than 400 words a minute, and none read faster than 510 words a minute. At the end of training, half the class was reading at a rate of more than 500 words a minute, with four officers reading more than 1000 words a minute.

The Basic Class achieved even better results. These officers started with a median rate of 319 words a minute, with 82 per cent comprehension. Their final rate was 658 words a minute, with 79 per cent comprehension. Half the forty-six officers in this class more than doubled their speed. At the end of the course, three members of the class were reading more than 2000 words a minute with almost perfect comprehension. And one of these officers developed the phenomenal speed of 3400 words a minute. He can read the standard 400-page novel in less than an hour. The best results are gained when training is formally scheduled for not more than one hour a day, three or four times weekly.

Upon completion of the course, each member of the Advanced Class was asked to complete a questionnaire on what he thought of the program. Almost all felt that they had benefited from the training. Three-fourths of the students expressed a desire to continue remedial reading training, several officers indicating that they intended to do so on their own time. One officer pointed out a corollary benefit—in his daily life he was now more observant and alert. "At home, for example, my wife can't move a picture or rearrange a stick of furniture without my seeing it as soon as I step into the room." The implications—in observation of military terrain and in many aspects of training and field operations—are obvious. Another added that, with his side vision considerably expanded, his driving ability has shown marked improvement.

Visitors to the Remedial Reading Laboratory frequently ask, "Can I do anything to improve my reading without having access to laboratory equipment?" The answer is Yes. With few exceptions, the average adult can train himself to read better by devoting thirty minutes a day, over a year's time, to reading the newspaper or other standard reading material at an increasingly faster rate. But few find the time or have the will power to persist in such self-training. This is especially true of students already overburdened with required reading.

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Reprints of this article available on request to the Editor.

# APPOINTED

New Secretaries of the Army and Navy have been appointed in the National Military Establishment. Extracts quoted are from their addresses to graduates of the service academies.

THE HONORABLE

GORDON GRAY

*Secretary of the Army*

"We must play our parts as citizens of a nation which loves truth and freedom and democracy—and their benefits and opportunities. We must do this to avoid perhaps long and extended eclipses of these things. Beyond that we must continually strive to assert these principles as members of a world which needs them more than ever before."

THE HONORABLE

FRANCIS P. MATTHEWS

*Secretary of the Navy*

"The greatness of America reposes in the God-given gift of our natural resources and in the unity, industry and integrity of our people. The security and perpetuity of that greatness depends upon the coordinated power and loyalty of our Army, Navy and Air Force, working together to accomplish the efficient and economical discharge of their high responsibilities to the Nation."

A Staff Article

# NEW AIR RESERVE TRAINING PROGRAM

THE new Air Force Reserve training program, drawn up in accordance with President Truman's directive to "make the fullest possible use of the Regular Establishment in the training of Reserves," provides training for 135,000 Reservists as compared with 42,000 now being trained. An outstanding feature of the new program is the use of Regular Air Force planes, equipment and bases by Reserve officers and airmen during week-end training periods.

Designed to improve the M-Day capacity of the Air Force, the new program calls for Air Reservists to be trained at 107 Regular Air Force bases and installations throughout the United States, and at 23 other locations designated as Air Force Reserve Training Centers (AFRTC). Four of the latter will be newly activated bases; the remaining 19 are already in operation. Twenty-two bases, previously used for Reserve training, will be deactivated. Thus the distribution of bases will be readjusted to conform more closely to the population density of Air Force Reservists in various parts of the country, and to the availability of training facilities.

A number of Reserve officers and airmen will be recalled to extended active duty for periods of three years or more, to serve on the operating staffs of the 25 Reserve tactical wings located at the 23 training centers.

Reservists will receive training under one of five programs:

(1) MOBILIZATION ASSIGNMENT PROGRAM—will include more than 12,000 Air Reserve officers who are scheduled for M-Day assignment to Regular Air Force units. Advanced training of these Reservists will facilitate the expansion of their units to full wartime strength in the event of an emergency. Training for this category will consist of a maximum of 48 on-job training periods each year, along with two weeks' active duty each year with the unit to which the Reservist is assigned. Mobilization assignments will be made at all echelons of Air Force commands. Reservists in this category will be eligible for pay for training periods and active duty.

(2) AFRTC PROGRAM—will offer a four-for-one training system to more than 36,000 Air Reservists at Reserve Training Centers. Under this system, four combat squadrons and the appropriate service elements, together with the group and wing headquarters, will train on the equipment of one squadron of the training wing, thus insuring maximum use of equipment. The Continental Air Command, with headquarters at Mitchel Air Force Base, New York, has direct charge of the AFRTC program.

Continental Air Command facilities and equipment are available to Reservists for 25 wings, consisting of five Light Bomb Wings equipped with C-47 transports; and 17 Troop Carrier Wings using the newer C-46 Commando transport planes. Each wing is assigned 16 tactical type aircraft and enough trainer type aircraft to provide 90 hours of flying training annually for each rated officer assigned to it.

Reservists in the AFRTC category will train one week-end each month, and may have a maximum of 90 hours' flying training annually. They will be eligible to receive pay for 48 training periods and for one 15-day period of active duty yearly.

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## *Air Force Reserve Training Centers*

(Revised to 25 May 1949)

**TO BE OPERATIVE**

| Location | Base |
|---|---|
| Birmingham, Ala | Municipal |
| Long Beach, Calif | Municipal |
| San Rafael, Calif | Hamilton AFB |
| Miami, Fla | International |
| Marietta, Ga | Marietta AFB |
| Belleville, Ill | Scott AFB |
| Park Ridge, Ill | Orchard Place |
| Indianapolis, Ind | *Stout Field |
| Kansas City, Kans | Fairfax Field |
| Fort Knox, Ky | Godman AFB |
| Philadelphia, Pa | †International |
| Bedford, Mass | Hanscom Field |
| Mt. Clemens, Mich | Selfridge AFB |
| Minneapolis, Minn | Wold-Chamberlain |
| Omaha, Nebr | Offut AFB |
| Cleveland, Ohio | Municipal |
| Oklahoma City, Okla | Tinker AFB |
| Coraopolis, Pa | Greater Pittsburgh |
| Memphis, Tenn | Municipal |
| Dallas, Tex | Hensley Field |
| New York, NY | †Floyd Bennett NAS |
| Portland, Oreg | †Portland Airport |

**TO BE DISCONTINUED**

| Location | Base |
|---|---|
| Montgomery, Ala | Gunter AFB |
| Tucson, Ariz | Davis-Monthan AFB |
| Denver, Colo | Lowry AFB |
| Tampa, Fla | MacDill AFB |
| Rantoul, Ill | Chanute AFB |
| Fort Wayne, Ind | Baer Field |
| Sioux City, Iowa | Municipal |
| Shreveport, La | Barksdale AFB |
| Bangor, Maine | Dow AFB |
| Chicopee Falls, Mass | Westover AFB |
| Jackson, Miss | Hawkins Field |
| Newark, NJ | Municipal |
| West Point, NY | Stewart |
| Hempstead, NY | Mitchel AFB |
| Rome, NY | Griffiss AFB |
| Reading, Pa | Municipal |
| San Antonio, Tex | Brooks AFB |
| Ogden, Utah | Hill AFB |
| Richmond, Va | Byrd Field |
| Tacoma, Wash | McChord AFB |
| Houston, Tex | Ellington AFB |
| Camp Springs, Md | Andrews AFB |

Two tactical Wings will be stationed at Long Beach, California, and two at Park Ridge, Illinois.

* Location of AFRTC tentative.
† To be newly activated.

(3) COROLLARY UNIT PROGRAM—will embrace about 325 Corollary Units comprising more than 29,000 officers and airmen. After organization by the Continental Air Command, Corollary Units will be transferred to the major air commands for training. Earmarked for "prompt" mobilization, these units will be formed in the vicinity of Regular units of the same type, and will make use of the equipment and facilities of the Regular USAF organization. The Corollary Unit program underscores the integration of the Reserve into Regular USAF operations. Development of this phase of the program to full efficiency will receive emphasis, even though it may require some slight curtailment of certain Regular activities.

(4) VOLUNTEER TRAINING UNIT PROGRAM—will include groups of Reservists having similar or allied Military Occupational Specialties. Volunteer training units—comparable to Army Reserve Composite Groups and to the Volunteer Reserve Units of the Navy—will be formed for the purpose of conducting training at scheduled assemblies, with a minimum of supervisory personnel and equipment. Although training pay and active duty are not authorized for Reservists participating in this part of the program, officers and airmen may accrue points toward promotion and retirement by attending the assemblies. At present there are 361 such units in the continental United States; and the total personnel contemplated for this type of training is 60,000.

(5) EXTENSION COURSE PROGRAM. The current offering of more than 75 extension courses—covering such diverse topics as Air Operations, Guided Missiles, Aerial Photography, and Logistic Staff Duty—will be considerably expanded. In completing these courses, prepared by the Air University, the Reservist, as at present, will earn credit for promotion and retirement purposes, but will not receive pay. An estimated 75,000 are expected to take part in this training.

In its overall aspects, the five-part Air Force Reserve training program seeks to enhance the effectiveness of Air Reserve training, with the most economical expenditure of funds, personnel, equipment, and supplies. When full-scale operation is achieved, it is expected that 135,000 Reservists will receive training, with more than 75,000 of that number—48,000 of them enlisted airmen—receiving inactive duty training pay. Currently, 42,000 are receiving training, and of these 25,000 are receiving inactive duty training pay.

# FORRESTAL

(1892-1949)

FIRST SECRETARY OF DEFENSE

*An article by*
*Walter Lippmann* **
*on the death of*
*James Forrestal*

When a friend dies, and all our memories of him come together, it can happen that one realizes where conversations that were never finished were leading. Since his breakdown I have been remembering how for years, no matter what else we talked about, Forrestal would bring up somewhere and somehow a variant of the same theme: how this Government, which he knew was almost unmanageable, could be made to work; how men could be found who were competent to administer it; how methods and institutions could be devised to make it possible for competent men to be wise.

I now realize that this problem, which had long preoccupied Forrestal as an official and as a citizen, came in the last tragic years of his life to be his own insoluble and unendurable personal problem. He was like a doctor who has studied a disease and then contracts it himself. He saw with an awful clarity his mistakes and his failures. Had he been judging anyone but himself, no one in Washington would have understood them better or would have judged them with more sympathy. He would have explained concretely how dangerously antiquated are the system and the working customs of our Government administration in the presence of our new responsibility in the world.

But he could not explain this to himself. He saw his mistakes and his failures so sharply that the affection of his friends could not console him, that public tributes could not deceive him. He saw them with such terrible conscientiousness and scruple, so out of their proportion in the record of his achievements, that he was exhausted—not so much by the long hours he worked as by the realization that he would never have the chance to repair his mistakes and to achieve what he had been appointed to achieve.

In the last weeks of his public life I saw him twice. The first time, at his home, he took me aside and told me that the decision that he would go, about which so much had been printed, had at last really been made definite. He said that he thought it was right, that after eight years he was stale, and that fresh minds were needed. Then he asked me what I thought. I was moved by the way he looked when I replied that it was probably time for him to leave The Pentagon but that, if this Government had any sense, it would not let him, as it had let [Secretary of War] Patterson, for example, get away. It would do what the British do so well—it would cure his staleness, not by retiring him but by changing his job. Then all his experience, which

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had been acquired so painfully, would be used and not wasted.

If I had any doubt that this was what he was feeling, it was dispelled when he returned to the subject the last time I saw him, and then again in a personal letter, in which he urged me to pursue the idea—which I am doing now in such sad circumstances—the idea of "the rotation of people in public life—if we were able to follow it, there is no doubt that it could lift the level of competence and, above all, of wisdom of administration."

I cannot help feeling that whatever the doctors may say, there is a public factor in this tragedy, and that it lies in the destructive and soul-destroying political custom of casting public men aside in the middle of their careers. Of all the wastes in the American system of government, our practice of retiring public men is the most expensive, and a principal cause of all the other and more obvious ways that money, materials and men are wasted.

And the more dedicated the man has been, the more his public life has become his private and inner life, the more shattering are the consequences of the abrupt and brutal termination of his career. Mr. Churchill has described what can happen within such a man, what happened to him when he was compelled to leave the Admiralty during World War I: "The change from the intense executive activities of each day's work at the Admiralty . . . left me gasping. Like a sea-beast fished up from the depths, or a diver too suddenly hoisted, my veins threatened to burst from the fall in pressure. I had great anxiety and no means of relieving it . . . I had long hours of utterly unwonted leisure in which to contemplate the frightful unfolding of the war."

Yet Mr. Churchill under the more benign British system had some prospect of returning, and he remained, as a matter of fact, a member of the cabinet. I shall always believe that if Forrestal had known before he left The Pentagon that he was really wanted somewhere else, as indeed in all justice and common sense he should have been, he would have had a reason for living and the fatigue the doctors talk about would not have overcome his will to live.

Mr. Forrestal served with devotion and great distinction as administrative assistant to the President of the United States, as Under Secretary and Secretary of the Navy, and finally as the Nation's first Secretary of Defense. He exhausted his strength by his unremitting labors in the burdensome duties of these offices during the war and the critical years which have followed the end of hostilities.

. . .

This capable and devoted public servant was as truly a casualty of the war as if he had died on the firing line.

*The Honorable Harry S. Truman*
*President of the United States*

By the death of James Forrestal, America has lost a citizen of heroic mold. In two world wars, in combat and in administrative positions of challenging responsibility, he dedicated all his strength and all his talents to our country. When he could have returned to civil life and a measure of the leisure he had earned, he accepted a new call to peacetime duty, exhausting in its demands but limitless in its influence on our national strength and the world peace. Under the heaviest drains on mind and body, he strove only to fulfill his obligations as a citizen.

*General of the Army*
*Dwight D. Eisenhower*

# DIGEST OF SPEECHES

*Extracts from speeches and public statements pertaining to the National Military Establishment*

## Secretary Johnson:

## PARTNERSHIP FOR SECURITY

The United States of America and the freedom loving peoples of Europe have formed a partnership in the business of peace . . . a partnership to which all members are making substantial contribution. We are giving a great deal; but, in considering what we are called upon to give, we must not overlook the assets that our European partners are bringing into this unique cooperative venture—a venture involving 300 million intelligent people, including 140 million capable Americans with a tradition of democracy, of free enterprise, possessed of raw materials in substantial quantity.

To those assets we propose to add the strength and prestige of the United States of America. We could contribute the finished equipment with which our partners may defend themselves and, therefore, also us. We would give the necessary military advice and technical assistance to enable them to use these defensive weapons to their best advantage. Each European government opposed to aggression and bound firmly to the tenets of democracy has an honorable place in this partnership of freedom, to which each contributes to the best of his means and ability.

Military aid to our European partners will cost money. It cannot be taken from the funds allotted in our Federal budget to the armed services, because these already are pared down to a point where further paring may imperil our security. Military aid must be an additional premium on our policy for peace insurance—which we must pay.

The cost of the first year, just short of a billion and a half dollars, is truly an appreciable sum. The added security that we will buy with that money, however, justifies the additional expense. Insurance, substantial insurance, effective insurance, does not come cheap. Military aid will put an added crimp in our pocketbook; but it is a crimp we can take without loss of freedom, without effect on our standard of living, without serious strain on our material resources. The insurance policy is sound. It is a premium well worth paying.

*From an address by The Honorable Louis Johnson, Secretary of Defense before the National Board of Insurance Underwriters*

## General Bradley:

## THE HAZARDS OF SECOND-RATE LEADERSHIP

*In selecting the service pay issue as a theme for an address before the Political Study Club (Washington, D. C.)—while the Congress was debating the issue—General Bradley remarked: "If this be a violation of the etiquette for petitioning Congress, then I ask that you ascribe it to faulty flanking tactics. For soldiers are taught to press their advantage long before they are taught their Washington manners."*

More than any other institution, the Army is in the business of people. If we are forever to be outbid for the services of outstanding men, then I submit that we shall entrust our security future to rejects, content to make their way in a steady job at steady pay. An army so handicapped in peacetime can-

not hope to produce the Marshalls and Eisenhowers it needs in war.

Bargain personnel seldom produce a bargain security system. Yet our Government clings to the theory that it can deal forever in basement prices on the talents of men.

We are in danger of making patriotism a luxury that the most able men can no longer afford. For today a talented young man must choose between a military career and the prospect of greater abundance for his family. By our failure to modernize pay scales, we have told him he can not have both. As a result of this shortsightedness, we have discouraged from the military service both officers and noncommissioned officers with the talents to improve us.

Today we are faced with an emergency that will adjudge the competence of our Armed Forces thirty years from now. Either we shall leave to our children a heritage of capable military leaders, or we shall hazard their lives on the limitations of second-rate men. Inferior inducements attract second-rate men. Second-rate men invite second-best security. In war there is no second prize for the runner-up.

However successful our research in science for weapons of defense, those devices can be no better than the men who direct them. If we expend billions on weapons research while pinching on personnel, we may find ourselves headed toward a doomsday economy trap. For weapons in the hands of capable men are weapons that win wars. But weapons in the hands of inept men are weapons that beckon disaster.

Until our Armed Forces are staffed with men of such superior quality and competence that they multiply in value with the passing of each year, we shall waste much of our Nation's resources in fruitless peacetime training. For unless each officer and noncommissioned officer has capabilities greatly in excess of the responsibility he holds, he is basically an unprofitable part of a military machine.

As leadership standards decline, for the lack of sufficient incentives for first-rate men, we shall find ourselves dabbling on day-to-day defenses rather than investing in security for the future. Reservoirs of military leadership are more important to the welfare of this Nation than pickled ships and lay-away planes.

Our problem is not a problem of psychological timing. Rather it is the need for correction of a long frozen injustice. Only by showing prospective leaders that service pay affords them fair incentives in this age can we hope to excite in them the desirability of service in the future.

The American people have created their military establishment in the image of their own Nation. It is an institution founded upon equal rights and upon freedom of opportunity. It is an institution that has permitted me, as the son of a country schoolmaster, to quit my 17-cents-an-hour job on the railroad, to compete for a commission and eventually to succeed General Eisenhower as the Army's Chief of Staff. Yet this is the institution habitually whipped, by every man with a grievance, as the demigod of oppression, the protector of privilege and the despoiler of moral young men.

The United States Army has permitted me, and thousands like me, to pay my way honorably in a career of service to the Nation. It has permitted me to serve in dignity and self-respect all my adult life a Nation for whose institutions the military has taught me greater love and devotion. When I plead for fair reward, it is not for the generation of which I am a part. I do not speak as a supplicant for a higher wage for myself.

It is time we acknowledged that leadership in the Armed Forces is a virtue that benefits the soldier as well as the Nation he serves. For if we are honestly concerned for the welfare of the American soldier, our first consideration should be for the quality of the men who command him. It is the competence of this leadership and the quality of this command that may readily spell the difference between his life and death in battle.

*From an address by General Omar N. Bradley, Chief of Staff, United States Army before the Political Study Club, Washington, D. C.*